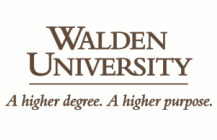

2015

School District Stress Prevention Practices in a Southern U.S. State

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This is to certify that the doctoral dissertation by

Stephen F. Keohane

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Walden University
2015

Abstract

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by

Stephen F. Keohane

MSW, Boston College, 1993

BA, Framingham State College, 1984

Dissertation Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

Health Psychology

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Abstract

The growing recognition that stress is a risk factor for youth health problems has spawned research on school-based stress prevention programs and services. While such programs and services are now available for adoption by schools, there is an absence of data on their use in U.S. schools systems. In the current study, Everett Rogers's diffusion of innovations model provided the theoretical framework for the investigation of school district stress prevention practices in one southern U.S. state. The sample for this quantitative descriptive study consisted of 135 out of 136 active public districts, and 72% of school systems completed and returned the survey (N = 97). Participants were designated school system personnel (83% administrators) who accepted either the e-mail or postal invitation to take part in the study. Descriptive data were gathered on the prevalence and characteristics of stress prevention programs and services for students, and the relationship between school district characteristics and programming and services prevalence was examined via chi-square and Fisher's exact tests. The frequency results indicate that 19% of districts provide programming, 22% provide services, and 23% provide both programming and services to students, and the Fisher's exact test revealed that programming prevalence is highest among urban districts compared to small town/rural school systems ($p = 0.12$). Recommendations for future research include the study of stress prevention practices with students and school system personnel at the national level. The findings of this study may contribute to the health and welfare of children and adolescents by informing the efforts of school systems to promote the adaptive competence of general student populations.

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Dedication

I would like to dedicate this dissertation to Jesus Christ, my Lord and Savior, who came to this world to serve humanity and to give his life as a ransom for all. It is through his teachings and work as a servant leader that I have come to know the true meaning of positive social change.

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Chapter 1: Introduction to the Study

Following the release of a landmark U.S. study in the 1980s that brought widespread public attention to the dismal state of the mental health care system for children and adolescents, efforts have been made at the federal, state, and local levels to improve the availability and quality of mental health services for children and youth (Cooper et al., 2008; Jaycox, Kataoka, Stein, Wong, & Langley, 2005; U.S. Public Health Service, 2000). This national commitment to overcoming earlier failures of public responsibility for meeting the mental health service needs of young people is exemplified by the ongoing efforts of researchers, federal health officials, and clinicians to address the problem of increasing stress in the lives of children and adolescents, which is now recognized as a major public health threat (Bremner & Vermetten, 2001; Compas, 2006; Felitti & Anda, 2010; Gerrity & Folcarelli, 2008; Knitzer & Olson, 1982; Middlebrooks & Audage, 2008; Munsey, 2010; Perry & Pollard, 1998; Shonkoff et al., 2012).

This growing public health concern has paved the way for the development of preventive interventions for reducing the incidence and prevalence of stress-related problems in children and youth (Durlak & Wells, 1997; Greenberg, Domitrovich, & Bumbarger, 2001; Kraag, Zeegers, Kok, Hosman, & Abu-Saad, 2006; Kutash, Duchnowski, & Lynn, 2006). It has further prompted calls for the use of these and other evidence-based prevention programs in schools and other community settings where children and adolescents spend a large amount of time and can more easily access such programmatic resources (Adelman & Taylor, 2006; American Academy of Pediatrics,

Committee on Psychosocial Aspects of Child and Family Health et al., 2012; Baggish & Hardcastle, 2005; Benson et al., 2000; Greenberg, 2006; Kraag et al., 2006).

However, while stress prevention programs have been developed for use in the education sector, there is an absence of state and national-level data on the everyday stress prevention practices of U.S. school districts. This information gap reflects an area of research need as federal health authorities have made a significant investment in prevention science to improve the mental health of children and adolescents, and the achievement of this worthy public health goal is contingent upon improving young peoples' access to preventive mental health programs and services (O'Connell, Boat, & Warner, 2009; The President's New Freedom Commission on Mental Health, 2003; U.S. Department of Health and Human Services, 1999).

This study supported the current prevention movement in child and adolescent mental health by investigating stress prevention practices in Tennessee public school districts, which provided needed empirical insights into stress-related programs and services for students across the state. It was anticipated that the results of the current study would promote social change by informing the work of educators and school health professionals who seek to adopt or improve school-based programs and services that strengthen the adaptive competence of young Tennesseans. This important social change objective is in line with current scientific opinion on the role of prevention initiatives in promoting healthy developmental outcomes in children and youth (O'Connell et al., 2009).

Background to the Study

In an effort to establish the importance of this study on school district stress prevention practices in the Volunteer State, it is necessary to present a brief overview of recent scholarly work that has contributed to the emergence of the school stress prevention concept and to the growth of societal interest in school-based interventions for reducing stress in children and adolescents. This information provided a scholarly context for the current study that helped reveal its significance and timeliness as a dissertation project.

School Stress Prevention Concept

As an emergent concept in school mental health, the term *school-based stress prevention* denotes school-oriented programs and services aimed at reducing the occurrence of stress and stress-related symptoms in children and adolescents (Kraag et al., 2006; Vierhaus, Maass, Fridici, & Lohaus, 2010). Based on insights drawn from the professional literature, it appears evident that the emergence of school stress prevention both as a health concept and topic of scientific importance is tied to scholarly work on the following health-related concepts whose study and application in relation to children and adolescents helped give rise to it: (a) stress, (b) coping development, (c) prevention, and (d) school-based mental health. The ensuing background discussion highlights some of this recent scholarly work that has fueled the growth of societal interest in school-based stress prevention programming and services for children and adolescents.

Stress Effects on Children and Youth

Although the term *stress* has undergone a fair amount of conceptual modification since its inception as a modern scientific concept in the early decades of the 20th century (Aldwin, 2007; Cooper & Dewe, 2004), it is commonly conceptualized today as an adverse stimulus that disrupts homeostasis through activation of an organism's stress response system (Cicchetti & Rogosch, 2009; Deak, 2007; Hubbard & Workman, 1998; Noble, 2002; Taylor & Stanton, 2007). According to researchers, there are two basic forms of stress (i.e., psychological and physical) that are distinguishable on the basis of their respective characteristic features. While psychosocial stressors require cognitive processing (i.e., appraisal of threat) to become activated and to assume stressor qualities, physical stressors such as physical illness, extreme temperatures, and exercise possess inherent stimulant properties that trigger arousal without the necessity of cognitive appraisal (Everly Jr. & Lating, 2002). It is further known that both types of stressors have the potential to elicit similar and distinct neurobiological stress response patterns of clinical importance (e.g., sympathetic-adrenal-medullary [SAM] system and hypothalamic-pituitary-adrenal [HPA] axis activation patterns; Alleva & Santucci, 2001; McRae et al., 2006; Mudder, 2011).

The recent surge of scientific interest in this topic has centered largely on efforts to elucidate the effects of stress on health and development across the lifespan, and has been influenced in part by findings on the stress experiences of children and youth (American Psychological Association, Task Force on Posttraumatic Stress Disorder and Trauma in Children and Adolescents, 2008; Bremner & Vermetten, 2001; Cicchetti &

Walker, 2001; Middlebrooks & Audage, 2008; Skinner & Wellborn, 1994). More specifically, reports in the literature indicate that more than one million American children are exposed to parental divorce each year, and approximately 900,000 children across the nation are victims of abuse and/or neglect (Kracke & Hahn, 2008; Rasul, 2006). Research also indicates that close to 60% of school-age children and adolescents live in low-income families in which severe economic stress is a reality, and millions of children and adolescents are directly and indirectly exposed to violence in their homes, schools, and communities (Addy & Wight, 2012a, 2012b; Finkelhor, Turner, Ormrod, Hamby, & Kracke, 2009; Wagmiller Jr. & Adelman, 2009). These developmental challenges are among the many identified sources of stress that contribute to high levels of psychological distress in young people today (Cicchetti & Rogosch, 2009; Cunningham, Brandon, & Frydenberg, 2002).

While these findings support the notion that stress is a major public health threat that has reached epidemic proportions in the lives of children and youth (Gerrity & Folcarelli, 2008; Humphrey, 2012; Margolin & Gordis, 2000), other researchers have found that some groups of children and adolescents have a greater risk of exposure to unhealthy stressors than others. For example, Cooley-Quille, Boyd, Frantz, and Walsh (2001) reported that adolescents in socioeconomically depressed areas experience higher rates of crime and violence exposure than youth in more affluent neighborhoods, and Finkelhor et al. (2009) found that the incidence of severe physical assaults rises steadily during the childhood years—particularly among 14- to 17-year olds. Other related research suggests that girls have higher rates of sexual victimization and posttraumatic

stress disorder (PTSD) than boys (Walker, Carey, Mohr, Stein, & Seedat, 2004), and studies have confirmed that ethnic and racial minority children and youngsters with disabilities are additional pediatric populations at increased risk for stress-related adjustment problems (Cooper, Masi, Dababnah, Aratani, & Knitzer, 2007; Whitney, Riley, & Coiro, 2003).

Neurobiological stress effects. According to researchers, the time frame from the prenatal period to adolescence is a time of increased stress vulnerability (Lupien, McEwen, Gunnar, & Heim, 2009). This period of heightened stress susceptibility is thought to stem in part from the highly plastic nature of child and adolescent brain development, in which the developing brain is known to be highly sensitive to the influence of adverse environmental events that have the potential to trigger psychopathology in pediatric populations (Burke, Hellman, Scott, Weems, & Carrion, 2011; Charmandari, Kino, Souvatzoglou, & Chrousos, 2003; Fisher & Gunnar, 2010; Nelson, 1999; Stiles, 2000).

Current research suggests that the heightened risk for developmental psychopathology associated with severe or persistent stress exposure emanates largely from the actions of the two main mediating pathways of the human stress response: (a) the HPA axis, and (b) the SAM system (Charmandari et al., 2003). Activation of these stress system components triggers the synthesis and release of various stress hormones (e. g., cortisol, corticotropin-releasing hormone, arginine vasopressin, adrenocorticotropic hormone, epinephrine) that have the potential to adversely affect the developing brain

when their levels are suppressed or persistently elevated (Teicher, Andersen, Polcari, Andersen, & Navalta, 2002; Weber et al., 2008).

Additional research indicates that prolonged alterations in stress hormone activity can damage stress-responsive neurobiological structures and processes through their effects on neurogenesis, synaptic overproduction and pruning, and rates of myelination during sensitive periods in childhood and adolescent brain development (Andersen & Teicher, 2008; Charmandari et al., 2003; Teicher et al., 2002). These findings are noteworthy in that frequent or prolonged episodes of stress hormone activation are known to place children and adolescents at increased risk for mood and anxiety disorders, alcoholism and substance abuse, externalizing behavior problems, personality disorders, and schizophrenia (Bremner & Vermetten, 2001; Middlebrooks & Audage, 2008; Neigh, Gillespie, & Nemeroff, 2009; Seckl, 2007; Teicher et al., 2002; van Winkel, Stefanis, & Myin-Germeys, 2008).

Other experimental work with humans and animals has yielded evidence that disturbances in the modulatory tone of inhibitory neurotransmitter systems within the HPA axis are additional mechanisms through which stress may elevate the risk for psychiatric problems. More specifically, the neurotransmitters serotonin (5-hydroxytryptamine) and gamma-aminobutryic acid (GABA) have drawn the interest of researchers based on their role in providing inhibitory input to various cortical and subcortical brain structures involved in the homeostatic regulation of the HPA axis (Carrasco & Van de Kar, 2003; Kaufman, Plotsky, Nemeroff, & Charney, 2000). Current evidence suggests that stress can disrupt the normal modulatory actions of these

neurotransmitters and promote hyper-excitability in amygdala circuitry and overexpression of conditioned emotional responses such as fear, anger, and anxiety (Jiang et al., 2009). These findings are of clinical interest as amygdala dysregulation has been implicated in the pathophysiology of mood and anxiety disorders (Monk et al., 2008; Nemeroff, 2003; Papadopoulos et al., 2011; Rich et al., 2006; Shekhar, Sajdyk, Gehlert, & Rainnie, 2003; Surguladze, Keedwell, & Phillips, 2003; Tasan et al., 2011; Tye et al., 2011).

Two additional neurotransmitters of empirical interest are dopamine (DA) and norepinephrine (NE). These catecholamines are widely distributed in the central nervous system and have been described as crucial components of the stress response (Ko et al., 2011; Perry, 2009). Both neurotransmitters play a role in the recruitment and modulation of the HPA axis, and are involved in some aspects of emotional regulation (Mead, Beauchaine, & Shannon, 2010). DA and NE are highly sensitive to the stimulating effects of repeated or prolonged activations of the stress response system, and research indicates that stress-induced alterations in dopaminergic and noradrenergic neurotransmission can trigger anxiety and emotional and behavioral disturbances (Beauchaine, Neuhaus, Zalewski, Crowell, & Potapova, 2011; Kvetnansky, Sabban, & Palkovits, 2009; Morilak et al., 2005).

Psychosocial stress effects. Other research has examined the influence of psychosocial stressors on children's and adolescents' learning readiness and academic and social adjustment across the primary and secondary school years. One finding that has emerged from this research is that the quality of children's relationships with parents

and nonfamilial caregivers (e.g., teachers) can profoundly influence their socioemotional development and capacity to learn (Hyson, 2002; Knitzer, 2000; Morales & Guerra, 2006). Such research has confirmed that children and youth with unstable family lives and insecure attachments relationships with parents often experience delays or impairments in the acquisition of academic skills and are at increased risk for internalizing and externalizing behavior problems such as mood and anxiety disorders, conduct disorders, interpersonal mistrust/social withdrawal, and alcohol and drug abuse (Brodsky & Stanley, 2008; Cole et al., 2005; Gilbert et al., 2009; Hussey, Chang, & Kotch, 2006; Kaufman Early Education Exchange, 2002; Kennedy & Kennedy, 2004).

Studies also suggest that children's and adolescents' psychosocial adjustment is affected by a range of other daily life challenges such as neighborhood, school, and medical stressors. More specifically, research indicates that children in high crime neighborhoods often develop heightened states of psychological and/or physiological arousal (e.g., PTSD symptomatology) and behavior problems that undermine their capacity to maintain healthy levels of engagement in academic and social pursuits (Cooley-Quille et al., 2001; Margolin & Gordis, 2000; Youngstrom, Weist, & Albus, 2003). Studies further indicate that grade transition difficulties, a lack of perceived school belonging, and high academic pressure coupled with low perceived social support affect students' psychosocial adjustment related to academic self-concept, school performance, emotional functioning, and behavioral self-regulation (Crockett, Peterson, Graber, Schulenberg, & Ebata, 1989; Demaray & Malecki, 2002; Isakson, & Jarvis, 1999; Roche & Kuperminc, 2012; Wenz-Gross, Siperstein, Untch, & Widaman, 1997).

Likewise, medical stressors such as cancer, diabetes-type 1, and other chronic health conditions that afflict many children and adolescents can also produce a myriad of adverse psychosocial effects such low self-esteem, feelings of grief/depression, anxiety/adjustment disorders, behavioral disorders, substance abuse, and perceived social isolation and loneliness (Compas, Jaser, Dunn, & Rodriquez, 2012; Frank, 2005; Schrag, McKeown, Jackson, Cuffe, & Neuberg, 2008; Suris, Michaud, & Viner, 2004). As noted previously, such stressors are among the many types of challenges that can permeate the lives of children and youth to the point that many young people lack sufficient intrapsychic and emotional resources with which to meet the normative daily challenges of schooling (Bagdi & Pfister, 2006; Pazaratz, 2004).

Positive aspects of stress. While recent empirical work on neurobiological and psychosocial stress effects provides insights into ways in which stress exposure can threaten the mental health of children and adolescents, these findings alone do not provide a complete picture of the nature of the relationship between stress and development. More specifically, some studies indicate that stressful experiences have the potential to promote positive developmental outcomes as well (Fournet, Wilson, & Wallander, 1998; Middlebrooks & Audage, 2008; Updegraff & Taylor, 2000). These seemingly paradoxical stress-related effects are known to be related to individual differences in how children and adolescents react/respond to stressful life challenges (Cicchetti & Walker, 2001; Compas, 2006; Grant, Behling, Gipson, & Ford, 2005; Kumpfer & Summerhays, 2006). This empirical insight has served as impetus for the study of coping and for the rise of scientific consensus on the importance of coping

research for understanding and explaining the differential effects of stress on young people (Compas, 1987; Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Masten, 2001; Skinner, Edge, Altman, & Sherwood, 2003).

Coping Development and Stress Mediation

The *coping* construct is commonly defined in the literature as an adaptive self-regulatory process involving cognitive and action-oriented efforts to deal with life stress (Compas, 2009; Eisenberg, Valiente, & Sulik, 2009; Garcia, 2010; Lazarus & Folkman, 1984; Skinner & Wellborn, 1994; Taylor & Stanton, 2007). The term denotes a voluntary (consciously controlled) stress response process that is distinct from involuntary (automatic) patterns of stress reactivity (Eisenberg et al., 2009; Lazarus & Folkman, 1984). As a theoretical and scientific concept, coping has been extensively studied in recent decades in relation to stress and adaptation in childhood and adolescence (Compas, 1987; Skinner & Zimmer-Gembeck, 2007; Zimmer-Gembeck & Skinner, 2011).

In their quest to understand the nature of the relationship between stress, coping, and adaptation, researchers have sought to identify the ways in which young people cope and the factors responsible for their coping patterns across time and situations (Fields & Prinz, 1997; Masten & Coatsworth, 1998; Pincus & Friedman, 2004; Rueda & Rothbart, 2009; Skinner et al., 2003; Skinner & Wellborn, 1994; Skinner & Zimmer-Gembeck, 2007; Taylor & Stanton, 2007; Tolan & Grant, 2009). Efforts have further been made to develop theoretically informed coping measures for examining relationships between individual traits and coping behavior and for assessing the efficacy of coping strategies

used by children and adolescents in stressful situations (Aldwin, 2007; Clarke, 2006; Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000; Garcia, 2010; Pincus & Friedman, 2004; Wong, Reker, & Peacock, 2006).

These initiatives over the past 30 years have expanded the knowledge base on child and adolescent coping. For example, the efforts of researchers to pinpoint the many cognitive, emotional, and behavioral responses displayed by children and adolescents in stressful situations has resulted in taxonomic models that capture the richness and diversity of coping strategies used by young people in everyday life (Ryan-Wenger, 1992; Skinner et al., 2003; Skinner & Zimmer-Gembeck, 2007). More specifically, researchers have identified various types of coping mechanisms (e.g., problem solving, support seeking, escape) and combinations of strategies (e.g., problem solving/instrumental action, cognitive/behavioral avoidance) that influence the psychosocial adjustment of children and youth (Clarke, 2006; Compas et al., 2001; Compas et al., 2012; Cunningham et al., 2002; Pincus & Friedman, 2004; Skinner & Zimmer-Gembeck, 2007).

In addition, studies have confirmed that intrapersonal characteristics such as maturation level and temperamental style and environmental factors such as family processes and neighborhood violence exposure contribute to individual and group differences in children's and adolescents' coping habits and patterns of adaptation to stress (Aldwin, 2007; Band & Weisz, 1988; Browne, Gafni, Roberts, Byrne, & Majumdar, 2004; Homberg, 2012; Kliewer, Fearnow, & Walton, 1998; Morales & Guerra, 2006; Peterson, 1989; Pincus & Friedman, 2004; Skinner & Zimmer-Gembeck,

2007). In view of these findings, it is not surprising that some researchers have rejected the medical model conception of coping as a process under strict genetic control (Farina & Fisher, 1982; Kozak, Strelau, & Miles, 2005), and embraced the notion that coping is a dynamic adaptive process emanating from bidirectional interactions between a person and his or her environment (Lazarus, 1993; Skinner & Edge, 1998; Skinner & Zimmer-Gembeck, 2007; Suls, David, & Harvey, 1996).

This popular transactional perspective has expanded scientific thinking about the nature of adaptive behavior and has provided a conceptual foundation for the developmental study of coping (Compas, Worsham, & Ey, 1992; Gould, Hussong, & Keeley, 2008; Newton & McIntosh, 2010; Skinner & Zimmer-Gembeck, 2009). The subsequent emergence of a transactionally informed framework and agenda for coping research has led to empirical insights into the contributions of individual and environmental factors to the coping development process (Rueda & Rothbart, 2009; Sameroff & MacKenzie, 2003; Skinner & Zimmer-Gembeck, 2009).

Neurobiological influences on coping development. In this expanding area of study, much has been learned in recent decades about the role of biological processes in coping development. This line of research has led to the discovery that brain maturational processes, coupled with the developing brain's innate capacity for experience-induced plastic reorganization, contribute to the emergence and strengthening of cognitive capacities deemed essential for adaptive self-regulation (Berger, 2011; Ryan, Kuhl, & Deci, 1997; Schore, 1994; Spessot, Plessen, & Peterson, 2004). Neuroscientific evidence further shows that the cognitive capacity for voluntary control of coping

emerges in relation to the maturation of a widely distributed network of brain regions, and is largely subserved by frontal lobe functions and subcortical systems (Derryberry, Reed, & Pilkenton-Taylor, 2003; Luna et al., 2001; Schore, 1996). These findings help account for age-graded shifts in coping patterns such as the transition from simple reflexive actions in infancy to voluntary actions during the preschool years, and the general developmental progression toward increasing sophistication and efficacy of coping responses across childhood and adolescence (Losoya, Eisenberg, & Fabes, 1998; Pincus & Friedman, 2004; Skinner & Edge, 1998; Skinner & Zimmer-Gembeck, 2007, 2009; Zimmer-Gembeck & Skinner, 2011).

Other empirical work has examined temperamental influences on coping development (Wachs, 2006). The major assumptions underlying this line of inquiry are that children and adolescents possess inborn predispositions (traits) that cause them to be more or less sensitive to stressful stimuli, and more or less able to self-regulate their responses to stress in healthy and adaptive ways (Rueda & Rothbart, 2009). Researchers have further hypothesized that constitutionally based differences in stress reactivity and self-regulation account for widespread variance in children's and adolescents' coping preferences and associated developmental outcomes (Wachs, 2006).

Support for these assertions is found in the coping development literature, as researchers have identified core dimensions of temperament (e. g., negative emotionality, difficult temperament, low reactive control, high behavioral inhibition/disinhibition) that appear to undermine resiliency and increase children's and adolescents' vulnerability to stress-induced developmental psychopathology (Compas, Connor-Smith, & Jaser, 2004;

Eisenberg et al, 2001; Fox, Henderson, Marshall, Nichols, & Ghera, 2005; Hirshfield-Becker et al., 2003; Nigg, 2006; Sportel, Nauta, de Hullu, de Jong, & Hartman, 2011; Wachs, 2006; Zhou, Lengua, & Wang, 2009). In addition, other studies have revealed that temperamental characteristics such as positive emotionality, easy temperament, and high effortful control are related to adaptive coping and healthy psychosocial adjustment (Compas et al., 2001; Derryberry et al., 2003; Derryberry & Rothbart, 1997; Eisenberg et al., 2004; Lengua & Sandler, 1996; Rueda & Rothbart, 2009; Ruschena, Prior, Sanson, & Smart, 2005; Smith and Prior, 1995; Wach, 2006; Wills, DuHamel, & Vaccaro, 1995).

Attention has also been placed on the relationship between personality factors and stress-related adjustment across development. Researchers have focused largely on relations between the Big Five personality traits (i. e., neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience) and coping strategy selection (Carver & Connor-Smith, 2010; Watson & Hubbard, 1996). This line of inquiry is grounded in the assumption that personality factors (predispositions) promote stable individual differences in coping tendencies and levels of adaptive success or failure across stressful situations (Hoyle, 2006). While this presumed association between personality and coping has been confirmed by research, the robustness of the relationship has been questioned on the basis of findings that indicate that individual coping behavior and patterns of adjustment change over time and across situations in relation to the complex interplay of biological, psychological, and environmental processes (Aldwin, 2007; Cicchetti & Rogosch, 2009; Connor-Smith & Flachsbart, 2007; Ebata & Moos, 1994; Suls et al., 1996; Terry, 1994; Tolan & Grant, 2009; Watson & Hubbard, 1996).

Environmental influences on coping development. Current research further suggests that coping has a strong learning component and is shaped by environmental factors such as one's family life and the social experiences of children and youth across development (Busjahn, Faulhaber, Freier, & Luft, 1999; Kozak et al., 2005; Mellins, Gatz, & Baker, 1996). Studies indicate, for example, that patterns of coping displayed by children and adolescents are influenced by family socialization processes such as parental and maternal responsiveness and demandingness, parental modeling and coaching, levels of family cohesion and conflict, the quality of parent-child relations, and family structure (Chen & George, 2005; Hamid, Yue, & Leung, 2003; Kliewer, Fearnow, & Miller, 1996; McKernon et al., 2001; Robertson, Xu, & Stripling, 2010; Stern & Zevon, 1990).

Additional research shows that the coping development of children and youth is also impacted by peer group affiliations such as personal friendships, in which a young person's problem-solving habits are influenced by friends' attitudes and behaviors and strategies of persuasion such as praise, encouragement, and threats of punishment or rejection (Azmitia, 1988; Berndt, 1999; Newman, 2000). These findings provide support for the notion that observational learning accounts for changes in coping that occur in children and youth in relation to interactions with parents, peers, and others (Azmitia, 1988; Bandura, 1986; Kobus, 2003; Weiss, McCullagh, Smith, & Berlant, 1998).

Other related empirical work indicates that children's and adolescents' coping behavior is also influenced by situational/contextual factors (e.g., social, cultural, economic) that determine the types of stressors youngsters face and the resources available to help them deal with adverse situations (Tolan & Grant, 2009). One such

factor discussed in the literature is family economic stress, which is thought to undermine normal parenting functions deemed essential to the coping skill development of children and youth (Conger, Ge, Elder Jr., Lorenz, & Simons, 1994; McLoyd, 1998; Power, 2004; Tolan & Grant, 2009). Research further indicates that the particular values, beliefs, customs, and traditions embedded within the sociocultural contexts in which children and adolescents live also play a role in determining their coping choices under conditions of stress (Coll & Szalacha, 2004; McCarthy et al., 1999; Zebracki, & Stancin, 2007).

Psychological influences on coping development. In addition to the documented effects of brain maturational processes, dispositional traits, and environmental factors on coping behavior (Browne et al., 2004; Cicchetti, 2010; Delongis & Holtzman, 2005; Taylor & Stanton, 2007), other research indicates that coping is also influenced by an individual's cognitive appraisals of the threat potential and controllability of an event and his or her conscious intentions to perform specific actions in response to the characteristics of perceived environmental demands (Aldwin, 2007; Compas et al., 2001; Lazarus, 1999; Skinner & Zimmer-Gembeck, 2011; Sniehotta, Schwarzer, Scholz, & Schuz, 2005). This finding has informed the scientific debate regarding how coping is best conceptualized (Aldwin, 2007; Bandura, 1989; Beehr & McGrath, 1996; Kozak et al., 2005; Lazarus, 1999; Suls et al., 1996), as some researchers have asserted that coping is best viewed as a developmental process under conscious control rather than a biologically directed process over which an individual has little direct influence (Compas, 2009; Skinner & Zimmer-Gembeck, 2007; Zimmer-Gembeck & Skinner, 2011).

The emergence of scientific understanding that coping is a largely malleable process of adaption across development has served as a primary impetus for interventions that would prove useful for promoting the adaptive competence of children and adolescents (Cicchetti, 2010; Masten & Obradovic, 2006; Smith & Carlson, 1997; Weisz, Sandler, Durlak, & Anton, 2005). Such evidence-based practices for enhancing children's and adolescents' coping-related self-regulatory competence include treatment interventions for stress-related disorders, and preventive interventions for reducing stress in general (nonclinical) student populations (Kalksma-Van Lith, 2007; Kruczek & Salsman, 2006; La Greca & Silverman, 2009). While both intervention models have proven efficacy for improving children's and adolescents' coping skills and psychosocial adaptation to stress (Bailey, 2001; Carr, 2004; Forman, 1993; Rosner, Kruse, & Hagl, 2010), preventive approaches are fast becoming the methods of choice in pediatric mental health service delivery (Beardslee, Chien, & Bell, 2011; Crosse et al., 2011; Frydenberg et al., 2004; Greenberg, Domitrovich, Graczyk, & Zins, 2005; O'Connell et al., 2009; Shea & Shern, 2011).

Prevention Movement in Child and Adolescent Mental Health

The origin of the *prevention* concept in behavioral healthcare dates back to the mental hygiene movement of the early 20th century, when Clifford Beers and other activists promulgated the notion that most types of psychiatric illness could be eliminated through the adoption and application of certain mental health principles at the individual, organizational, and societal levels (Beers, 1921; Kessler & Albee, 1975). This influential

movement became an important driving force behind passage of the National Mental Health Act of 1946, which called for the founding of the National Institute of Mental Health (Weisz et al., 2005). The subsequent growth of prevention science during the 1950s and 1960s included changes to the prevention concept, which had expanded over time to include three basic levels of intervention: (a) primary prevention activities centered on reducing the occurrence of a psychiatric disorder, (b) secondary prevention activities focused on early treatment of a disorder to promote rapid recovery and prevent disability, and (c) tertiary prevention activities designed to reduce relapses and minimize the severity of disability associated with an existing psychiatric illness (Weissberg, Kumpfer, & Seligman, 2003).

This tripartite prevention model was later revised in the 1990s in response to the Institute of Medicine's (IOM's) concern that the inclusion of secondary and tertiary intervention activities under the rubric of preventive healthcare undermined the prevention concept, which it argued should denote only clinical activities that take place prior to the onset of a diagnosable psychiatric condition (U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, 2007). This controversy resulted in the redefinition of prevention as a concept denoting three levels of primary prevention activity for reducing the occurrence of a disorder: (a) universal prevention activities targeting whole populations, (b) selective prevention activities for at-risk subpopulations, and (c) indicated prevention activities directed toward individuals with early symptoms that do not yet meet diagnostic criteria for a specific clinical disorder (O'Connell et al., 2009).

While the prevention concept's definitional structure has remained unchanged since the 1990s, the preventive mental health movement has expanded its influence to the point that leading federal health agencies have shifted their research and policy focus in recent decades from a largely treatment/recovery orientated agenda to a strategic emphasis on primary prevention (Shea & Shern, 2011; U.S. Department of Health & Human Services, 1999; U.S. Department of Health & Human Services, Substance Abuse and Mental Health Services Administration, 2011). This shift in research emphasis is seen in efforts to develop evidence-based interventions (EBIs) for reducing the incidence and prevalence of psychiatric disorders in children and adolescents (Beardslee et al., 2011; Greenberg, 2006; O'Connell et al., 2009). These efforts have led to the development of prevention programming related to alcohol and drug abuse, aggression/bullying, school dropout/nonattendance, depression, and anxiety (American Psychological Association, Task Force on Evidence-Based Practice for Children and Adolescents, 2008; Greenberg et al., 2001; Weissberg & Bell, 1997; Weisz et al., 2005).

Prevention scientists have further directed their attention toward evidence-based programming to address the problem of excessive stress in the lives of children and adolescents (Copeland, Keeler, Angold, & Costello, 2007; Harkness, Bruce, & Lumley, 2006; Hazel, Hammen, Brennan, & Najman, 2008; Middlebrooks & Audage, 2008). These efforts have resulted in the development of several school-based stress prevention programming models such as coping skills training, mind/body interventions, psychoeducational programming, and eclectic methods of stress prevention (Astin, Shapiro, Eisenberg, & Forys, 2003; Elbertson, Brackett, & Weissberg, 2010; Foret et al.,

2012; Frydenberg et al., 2004; Greenberg et al., 2001; Kraag et al., 2006). The clinical value of these programming models is best understood within the context of two related findings on the nature of the coping process: (a) coping has a strong developmental component, and (b) coping resources are acquired skills that need to be cultivated and reinforced through the school years and beyond (Romano, Miller, & Nordness, 1996; Wong et al., 2006; Zimmer-Gembeck & Skinner, 2011)

Prevention in school mental health practice. Notwithstanding the recent pressure from researchers, federal and state health authorities, practitioners, and the general public for the more effective use of preventive mental health interventions with children and their families (Davis, Peterson, Helfrich, & Cunningham-Sabo, 2007; Greenberg et al., 2005), the primary driving force behind the call for prevention programming in schools has been the movement to reform the nation's mental health care system to make it more responsive to the service needs of children and youth (Weist, Lowie, Flaherty, & Pruitt, 2001). In this effort, the federal government and the majority of U.S. states have taken steps to improve mental health services for children and youth by adopting an evidence-based public health framework that emphasizes the delivery of preventive, early intervention, and treatment services in schools and other community-based settings where children and adolescents can gain access to such services (Cooper et al., 2008; Weist, 2005).

The growth of societal awareness that the school environment is one of the more practical settings in which to implement prevention and treatment-oriented mental health programs and services has given rise to a national movement to integrate schools and

mental health systems of care for children and adolescents (Atkins, Hoagwood, Kutash, & Seidman, 2010; Center for Mental Health in Schools at UCLA, 2004, 2008a; Masia-Warner, Nangle, & Hansen, 2006; Noam & Herman, 2002). This federal health and education initiative has occurred largely through school-based health centers that deliver services to students on school grounds, and through school-linked service arrangements, in which services are coordinated by schools and delivered to students at community-based health care delivery sites off campus (Adelman et al., 1999; American Academy of Pediatrics, Committee on School Health, 2001; Hurwitz & Maras, 2009).

The ongoing movement to establish a national school-based/linked mental health service model that emphasizes prevention underscores the need for information on school-based stress prevention practices, as school systems nationwide are increasingly being called upon to adopt prevention programs that enhance students' coping skills and socioemotional development (Center for Mental Health in Schools at UCLA, 2006; Greenberg et al., 2005; Kruczek & Salsman, 2006; Merrell, 2010; Pincus & Friedman, 2004). However, at the present time, such empirical information is lacking, as researchers to date have not examined the usual-care practices of U.S. school systems in the area of stress prevention (Brener, Martindale, & Weist, 2001; Brener, Weist, Adelman, Taylor, & Vernon-Smiley, 2007; Foster et al., 2005; Lever, Chambers, Stephan, Page, & Ghunney, 2010). This practice-related knowledge gap represents an important area of research need, as researchers and policy makers at the state and federal levels have made a concerted effort in recent decades to address the documented gap between the mental health service needs of children and youth and the availability of

effective programs to meet those needs (Cooper et al., 2008; Council on Children's Mental Health, 2009; U.S. Public Health Service, 2000; Weist, 2005; Weist and Albus, 2004).

Statement of the Problem

In recent years, federal health authorities have joined forces with child welfare organizations and concerned scientists in efforts to raise awareness about the problem of excessive stress in the lives of children and adolescents, which is now considered a major source of risk for physical and mental health problems in development (Cole et al., 2005; Compas, 2006; Cooper et al., 2007; Felitti & Anda, 2010; Kim, Conger, Elder Jr., & Lorenz, 2003; Middlebrooks & Audage, 2008; Stepleton, McIntosh, & Corrington, 2010). This growing public health concern has sparked research interest in the development of stress prevention programs for use in schools and other natural community-based settings where children and youth can more easily access such programs (American Academy of Pediatrics, Committee on School Health, 2001; Greenberg et al., 2001; Kraag et al., 2006; Weist, 2005).

However, while evidence-based programs currently exist for use in schools, there is a lack of empirical data on the real-world stress prevention practices of public school districts across the nation. As previously discussed, this current information gap denotes an area of research need, as federal and state health officials are currently looking to schools to assist in the promotion and protection of child and adolescent mental health by improving student access to a broad range of evidence-based prevention and treatment

services (Center for Mental Health in Schools at UCLA, 2008a; Cooper, 2008; Stephan, Weist, Kataoka, Adelsheim, & Mills, 2007; Weist et al., 2003).

Purpose of the Study

The purpose of this descriptive quantitative study was to investigate stress prevention practices in public school districts in the state of Tennessee, in order to generate needed empirical insights into stress-related programming and services for children and adolescents across the state. In this effort, descriptive information was gathered on the prevalence and characteristics of stress prevention programs and services for students, and the relationship between school district characteristics and current stress prevention practices.

It is important to emphasize that the current study is best classified under the rubric of school health services research (Teich, Robinson, & Weist, 2007; U.S. Department of Health & Human Services, Agency for Healthcare Research and Quality, 2009; Werthamer-Larsson, 1994), which is concerned principally with the investigation of the prevalence and characteristics of health services for students. Thus, it is distinguishable from intervention process evaluation research, in which investigators are primarily interested in examining factors associated with a school system's decision to adopt a particular program as well as the extent to which an adopted program is being implemented the way its developers intended for it to be used (program fidelity) in the school environment (Dane & Schneider, 1998; Greenberg et al., 2005; Rohrbach, Ringwalt, Ennett, & Vincus, 2005). It should be further noted that even though this study's intended purpose was to establish whether stress prevention programs and

services are currently provided to students in public school districts in the state of Tennessee, it sets the stage for future studies directed toward the evaluation of implementation quality and outcomes related to specific school-based stress prevention programs and services reported by districts in this survey research project.

Theoretical Framework

The theoretical framework for the current study is Rogers's (2003) *diffusion of innovations theory* (DIT), a commonly utilized model in diffusion research that is thought to be of value in understanding the process of program adoption in school-based mental health (Atkins et al., 2010; Center for Mental Health in Schools at UCLA, n.d.; Dearing, 2008; The Evidence-Based Intervention Work Group, 2005). According to Rogers's classic theory, diffusion is conceptualized as a process through which innovations such as new ideas or practices are communicated to members of a given social system over time using specific communication channels (Dearing, 2009; Rogers, 2003). The theory posits the existence of four main elements in the innovation diffusion process: (a) characteristics of the innovation, (b) communication channels, (c) time, and (d) the social system (Rogers, 2003).

Characteristics of the Innovation

The first diffusion process component is the innovation itself, whereby it is initially perceived by an individual or unit of adoption (e.g., school system) as being novel and potentially useful for solving a problem (Rogers, 2003). According to DIT, there are five intrinsic attributes of an innovation that jointly determine whether it will be adopted after being introduced to an individual or organization: (a) relative advantage,

(b) compatibility, (c) complexity, (d) trialability, and (e) observability (Rogers, 2003). Rogers described relative advantage as the extent to which an innovation is perceived as being better than the idea, activity, or object that it may potentially supercede, and he defined compatibility as the degree to which an innovation is perceived as being in sync with the particular values, prior experiences, and needs of potential adopters. Rogers further explained that the characteristics of complexity and trialability denote an innovation's perceived difficulty in understanding/implementing and its potential for experimental application, respectively, and he described observability as the degree to which an innovation's inherent benefits can be readily seen by adopters. Taken together, these attributes were thought by Rogers to account in part for an innovation's rate of adoption (Rogers, 2003; The Evidence-Based Intervention Work Group, 2005).

Communication Channels

As mentioned previously, the second component of Rogers's innovation diffusion model is communication channels, which are the means by which messages about an innovation get transmitted from one individual or system unit to another (Rogers, 2003). According to Rogers, the nature of information exchanges between pairs of individuals or organizational units partly determine the likelihood that an innovation will be viewed favorably and ultimately adopted into practice in a given social context. DIT further asserts that this information sharing process comprises four fundamental elements: (a) an innovation, (b) an individual or other unit of adoption that has information about or experience in using the innovation, (c) another person or organizational unit that does not yet have information about or experience in using the innovation, and (d) a

communication channel that facilitates the transmission of information between individuals or organizational units (Rogers, 2003).

The Time Element

The third core component of DIT is the innovation-decision time period, which Rogers described as a multistage decision-making process that determines the relative speed at which an innovation is adopted at the individual or organizational level (The Evidence-Based Intervention Work Group, 2005). According DIT, the temporal dimension of the innovation diffusion process consists of the following five stages through which an organization passes as it evaluates and decides whether or not to incorporate an innovation at a systemic level:

- Agenda setting-a problem is identified, defined, and assessed.
- Matching-an innovative solution is sought for an identified problem.
- Redefining/restructuring-the adopted innovation is adapted as needed to accommodate the organization.
- Clarifying-organizational members become familiar with and acquire an understanding of an innovation's meaning and value.
- Routinizing-the point in the innovation diffusion process in which the innovation loses its novelty as it becomes fully integrated within the adopting organization (Center for Mental Health in Schools at UCLA, n.d.; Rogers, 2003; The Evidence-Based Intervention Work Group, 2005).

The Social System

The fourth conceptual dimension of Rogers's theoretical model is the social system, which is conceptualized as a set of interconnected units that work together to solve an identified problem and achieve a common goal (Rogers, 2003). According to DIT, the innovation decision-making process at the systemic level is affected by an organization's social structure and is influenced by factors such as the role of opinion leaders and change agents, existing bureaucratic arrangements, interpersonal networking and communication patterns, and behavioral norms that govern social relations within an organizational environment (Rogers, 2003).

Summary

As an inductive form of research, this quantitative descriptive study was not carried out with the intention of testing specific hypotheses derived from DIT. Instead, Rogers's theory has been applied to the survey results in an effort to make sense of the survey response patterns uncovered in the analysis of findings (Hayes, 2000; Trochim & Donnelly, 2006). Thus, it was anticipated that DIT would provide theoretical insights into process factors that may be at work in influencing current stress prevention programming and service trends in public school districts across Tennessee. Such informed speculation is useful for generating tentative hypotheses regarding the association between diffusion process factors and stress prevention adoption practices at the school system level that can be tested in future research.

Research Questions

According to the school health services literature related to this study and described in Chapter 2, researchers to date have not examined questions pertaining to the availability and characteristics of school-based stress prevention programs and services for children and adolescents at either the national or state levels. Instead, they have sought general descriptive data on mental health services and evidence-based programs for students with emotional and behavioral problems in school systems across the United States (Lever et al., 2010; Teich et al., 2007).

In prior studies, researchers have gathered descriptive data on the prevalence and characteristics of school-based services such as psychiatric consultation, medication management, individual counseling, crisis services, and prevention programming initiatives in the areas of alcohol and drug use, AIDS and STDs, violence, eating disorders, and accident avoidance (Brener et al., 2007; Foster et al., 2005; Lever et al., 2010). Although this line of research has also yielded descriptive information pertaining to national health education and clinical service trends related to stress, these findings do not indicate the extent to which such trends constitute prevention-oriented activities with students (Brener et al., 2001; Kann, Brener, & Wechsler, 2007; Kolbe et al., 1995; Lever et al., 2010). Consequently, no empirical basis exists at this time for inferring current practice trends related to stress prevention programming and services for students at the state and national levels.

In other related empirical work of relevance to this study, researchers have examined relationships between school demographic characteristics and the availability

of student health services (Balaji, Brener, & McManus, 2010; Brener, Jones, Kann, & McManus, 2003; Slade, 2003). A few of the school characteristics found in these studies to be associated with student health services include school size, school enrollment, geographic region, county median income, urbanicity, discretionary dollars spent per pupil, percentage of White students, and percentage of college-bound students (Brener et al., 2003; Slade, 2003). Although noteworthy, these findings do not provide information pertaining to school demographic factors and stress-related programming and services for students across the nation (Brener et al., 2003; Slade, 2003).

In light of these identified knowledge gaps in the school health services literature, there are three previously unanswered research questions related to school-based stress prevention practices with children and adolescents that guided this descriptive study:

- How prevalent are stress prevention programming and services for students in Tennessee public school districts?
- What are the general characteristics of stress prevention programs and services for students in public school districts across Tennessee?
- Are school district characteristics associated with the availability of stress prevention programs and services for students in Tennessee?

Nature of the Study

This quantitative study was intended to generate baseline descriptive information on stress prevention practices in public school districts in the state of Tennessee. A cross-sectional survey design was used in the study to collect primary data on the population of public school systems listed in the State Department of Education (SDE)

directory for the Volunteer State, which includes information for all 137 active public school districts (Tennessee Department of Education, 2013). The data collection plan entailed the use of a survey instrument designed to measure the school stress prevention practice variables of interest in this study. The survey yielded categorical data that was subsequently analyzed using the descriptive and inferential statistical procedures described in Chapter 3 of this report (Larson, 2006; Powers & Xie, 2008).

Rationale for Study Design

The rationale for selecting the cross-sectional survey method was the desirability of utilizing an approach that achieves the information gathering objectives of this study in a manner that is efficient and cost effective. Thus, given that this study was intended to measure stress prevention practices in Tennessee school districts at a single point in time and did not include the manipulation of variables or the assessment of changes in relationships between variables across time, the cross-sectional survey approach appeared best suited for this research project (de Vaus, 2004; Johnson, 2001; Kelley, Clark, Brown, & Sitzia, 2003). Empirical support for this design choice was found in the school health services literature, as the cross-sectional survey research approach has been the preferred methodology of researchers in studies to date on school-based mental health services (Brener et al., 2001; Brener et al., 2007; Foster et al., 2005; Kolbe et al., 1995; Lever et al., 2010; Teich et al., 2007).

Study Variables

There are two major concepts associated with this research project from which the study variables were derived: (a) school stress prevention practices, and (b) Tennessee

school districts. The first two groups of variables consisted of the measurable characteristics of the school stress prevention practices construct, which was conceptually defined in this study as curriculum-based programs and mental health services carried out in schools for the purpose of reducing stress in general student populations (Frydenberg et al., 2004; Kragg et al., 2006; O'Connell et al., 2009). The construct's core measurable characteristics (i.e., curriculum-based stress prevention programs and school-based stress prevention services) were operationalized in a manner that yielded two sets of variables on which primary data were gathered using a survey instrument designed for these measurement tasks. The methodology section of Chapter 3 provides a detailed overview of how the survey instrument's item structure was constructed in relation to the operational indicators of the school stress prevention practices construct.

The other set of study variables consisted of the measurable demographic characteristics of the Tennessee school district concept, which was conceptually defined in this study as a local education agency (LEA) in the state of Tennessee that employs teachers and that is administratively responsible for providing educational instruction and support services to children and youth (Strizek, Pittsonberger, Riordan, Lyter, & Orlofsky, 2006). As with the school stress prevention practices construct, the Tennessee school district construct was operationalized in a manner that allowed for its measurement using the survey instrument designed for this study. The methodology section of Chapter 3 provides a detailed overview of the school district demographic variables on which data were obtained.

Scope, Assumptions, Delimitations, and Limitations

Scope of Study

The information parameters of the current study were limited to the following three categories of descriptive data related to stress prevention practices in Tennessee public school districts: (a) the prevalence of stress prevention programs and services for children and adolescents, (b) the characteristics of available programs and services, and (c) information on the association between school district characteristics and programming/service prevalence. As this descriptive study was not intended to be a program evaluation research project, no outcome data were gathered pertaining to either program implementation fidelity or the effectiveness of programs/services reported by school district participants.

Assumptions

Assumption 1. One of the important assumptions underlying this study concerns the notion of human free will. Although the philosophical debate on this issue remains unresolved in the field of psychology (Baumeister, 2008), it was assumed for the purpose of this research that human beings possess the capacity for voluntary control over their thoughts and actions. This assumption was based on the realization that it would make little sense to investigate the status of stress prevention programs and services for children and adolescents unless one assumed that human beings possess the capacity for self-regulatory development.

Assumption 2. Given that the units of observation in this research project were public school districts and not students, it was assumed that the respondents would be

school district personnel who have been chosen to represent their school systems in the survey on the basis of their knowledge of prevention programming and services for students.

Assumption 3. It was assumed that the population frame for this study was complete and accurate as an up-to-date list of all active public school systems in the Volunteer State was obtained from the Tennessee SDE website.

Assumption 4. Based on the objective nature of this research project it was further assumed that participants would provide honest and accurate responses to the survey items.

Delimitations

Delimitation 1. The current study investigated the prevalence and characteristics of stress prevention programs and services for students in Tennessee public school districts, and also examined the relationship between district demographic characteristics and programming/service prevalence.

Delimitation 2. The current study provided a descriptive overview of school district stress prevention practices with students in Tennessee, and did not include the measurement of outcomes of such activities.

Delimitation 3. The population frame for this study included only active public school districts in Tennessee.

Delimitation 4. The results of this study were intended to be applicable and generalizable only to the population of public school districts in the Volunteer State.

Delimitation 5. The study variables consisted of the measurable characteristics of the school stress prevention practices concept and the Tennessee school district concept.

Limitations

Limitation 1. The first limitation concerns the issue of external validity (Mitchell & Jolley, 2004), as the results of this study are not generalizable beyond the population of public school systems in the state of Tennessee.

Limitation 2. Based on the fact that cross-sectional research methods are known to lack internal validity (Mitchell & Jolley, 2004; Schwab, 2005), causal inferences cannot be drawn in the current study from the identified statistical relationship between stress prevention programming prevalence and school district community type.

Limitation 3. It is possible that the validity of the study findings have been compromised due to random measurement error stemming from programming/service knowledge heterogeneity among school district respondents (Asher, 1974; Lessler & Kalsbeek, 1992; Trochim & Donnelly, 2006).

Significance of the Study

The current study was intended to generate primary descriptive data on school district stress prevention practices in Tennessee that did not exist previously, and that could promote further study in this research area as well as inform the work of educators and school health professionals who seek to promote the adaptive competence of students through programming/service initiatives. As mentioned previously, this social change objective is in line with current scientific opinion on the role of school prevention

initiatives in promoting healthy developmental outcomes in children and adolescents (O'Connell et al., 2009). It is further justified by the knowledge that children and adolescents posess an innate capacity for healthy growth and development that can be enhanced through the efforts of caring adults to help them reach their full potential as human beings (Damon, 2004; Edwards, Mumford, & Serra-Roldan, 2007; Kegler, Young, Marshall, Bui, & Rodine, 2005; Larson, 2000; Masten, 2001; Ryan & Deci, 2000).

Conclusion

Chapter 1 has provided an introduction to the current study that explains its purpose and potential significance with regard to promoting the mental health of students, which is both a national priority and important health-related objective of educators, public health officials, and lawmakers in the state of Tennessee. With that said, Chapter 2 provides an overview of current research on stress-related health practices with students in educational settings, and Chapter 3 discusses the survey research methodology used in the current study. In addition, Chapter 4 presents an overview and analysis of the descriptive findings, and Chapter 5 of this report includes an interpretation of the survey findings along with discussion about the limitations of the present study and the potential social change implications of this research for young Tennesseans.

Chapter 2: Literature Review

Introduction

As discussed in Chapter 1, researchers have documented the enduring effects of stressful life experiences on the well-being of children and adolescents. Among the more common adverse childhood experiences cited in the literature are illness-related physiological stressors (e.g., congenital heart disease, asthma, juvenile diabetes, allergic conditions, cancer, obesity) and psychosocial challenges related to poverty, abuse and neglect, family instability, violence exposure, academic pressure, and peer relational difficulties (Clark, Striefel, Bedlington, & Naiman, 1989; Dyson, 1990; Fallin, Wallinga, & Coleman, 2001; Gallatry & Zimmer-Gembeck, 2008; Hagele, 2005; Halfon & Newacheck, 2010; Kim, 2011; McDonald, Deatrick, Kassam-Adams, & Richmond, 2011; Sontag, Graber, & Clemans, 2011; Van Cleave, Gortmaker, & Perrin, 2010; Wight, Chau, & Aratani, 2010). According to researchers, such adverse life experiences are among the many identified sources of risk for physical and mental health problems in development that can undermine students' academic and psychosocial adjustment (Bowen, Rose, Powers, & Glennie, 2008; Cole et al., 2005; Compas, 2006, 2009; Cunningham et al., 2002; Dyson, 1990; Engle & Black, 2008; Goodman, Miller, & West-Olatunji, 2012; Grant et al., 2003; Mindes & Jewett, 1997; Mistry, Benner, Tan, & Kim, 2009; Napoli, Krech, & Holley, 2005; Woolley et al., 2008).

Other related scholarly work indicates that the potential health risks associated with repeated or prolonged stress exposure can be modified through the process of coping (Compas et al., 2001; Kraag et al., 2006; Lazarus & Folkman, 1984; Rutter,

1981), which is now widely regarded as a malleable developmental process involving adaptive skills that must be learned and reinforced throughout the school years and beyond (Aldwin, 2007; Fok & Wong, 2005; Foret et al., 2012; Mishara & Ystgaard, 2006; Romano et al., 1996; Wong et al., 2006). The growing scientific recognition that the level of coping proficiency attained by children and youth can affect health outcomes related to stress has spawned widespread research interest in the development of prevention programs for enhancing young peoples' adaptive competence (Cohen & Park, 1992; Compas et al., 2001; Cunningham et al., 2002; Fournet et al., 1998; Frydenberg et al., 2004; Kraag et al., 2006; Kumpfer & Summerhays, 2006; Mendelson et al., 2010; Mindes & Jewett, 1997; Olbrich, 1990; Pincus & Friedman, 2004; Wall, 2005).

The rise of scientific interest in this programmatic initiative is reflected in the stress prevention intervention literature, which indicates that a variety of clinic and school-based stress prevention programs have been developed for use with children and adolescents (Berkowitz, Stover, & Marans, 2011; Brotman et al., 2007; Durlak & Wells, 1997; Greenberg et al., 2001; Kassam-Adams et al., 2011; Kraag et al., 2006; Rones & Hoagwood, 2000). However, with the understanding that the main purpose of the current study was to investigate stress prevention practices in public school systems in the state of Tennessee, the review of literature on stress prevention programming and services was limited to school-based programs and services. With that said, the four main goals of the literature review were to (a) delineate what is already known about the study topic, (b) confirm the existence of knowledge gaps that would provide justification for this study, (c) identify the unanswered research questions that would guide the current study, and (d)

establish how this descriptive study advances the state of scientific knowledge on school-based stress prevention practices in the state of Tennessee (Bryman, 2008; Randolph, 2009).

Literature Search Strategy

In an effort to obtain a representative and nonbiased sample of the most relevant and up-to-date research related to the topic of school-based stress prevention, a four-pronged strategy was utilized in the literature search process (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Higgins & Green, 2008). The first of these strategies involved an electronic database search using the following keyword combinations: *(a) preventive stress intervention research, (b) Tennessee school stress prevention, (c) school stress prevention, (d) school stress management, (e) child/adolescent stress management, (f) school crisis prevention, (g) school-based coping skills training, (h) school mental health, (i) school-based health services, (j) coordinated school health, (k) expanded school mental health, (l) stress/coping/development, (m) child/adolescent mental health prevention, (n) school-based intervention implementation research,* and *(o) school-based intervention process evaluation research*. These search term combinations were used in several research databases including Academic Search Complete, Cochrane Reviews, ERIC, ProQuest Central, ProQuest Dissertations & Theses (PQDT), psycINFO, and PubMed. This initial search strategy included both unpublished and published studies, as it is known that published research alone does not always provide a clear and accurate picture of the state of scientific knowledge on a given topic

of empirical interest (Mcleod & Weisz, 2004; Reese, Prout, Zirkelback, & Anderson, 2010).

The second literature search strategy entailed a manual search for relevant articles in the following refereed journals: *(a) School Mental Health, (b) Journal of School Health, (c) Advances in School Mental Health Promotion, (d) The Journal of Behavioral Health Services & Research, (e) The Journal of Primary Prevention, (f) School Psychology Review, (g) Journal of School Psychology, (h) Psychology in the Schools, (i) Journal of Pediatric Psychology, (j) Journal of Clinical Child and Adolescent Psychology, (k) Administration and Policy in Mental Health and Mental Health Services Research,* and *(l) Children's Services: Social Policy, Research, and Practice*. The reference lists of identified articles were also screened in an effort to locate other pertinent literature that may have been overlooked in the electronic search process (Durlak et al., 2011; Park-Higgerson, Perumean-Chaney, Bartolucci, Grimley, & Singh, 2008). Federal and state government websites were also examined in the search for additional authoritative information related to the topic of school-based stress prevention.

These literature search strategies were restricted on the basis of specific parameters, which included language, publication date, publication type, population type, study type, and age range. More specifically, only studies written in the English language and that appeared in published or unpublished form between 2002 and 2012 were eligible for inclusion in this review (Durlak et al., 2011). In addition, eligible publications were restricted to books, authoritative governmental and institutional publications, and studies from peer-reviewed journals and dissertation databases that

were most relevant to the topic of school-based stress prevention. The selection criteria for identified program evaluations also included the requirements of a primary study focus on stress prevention with nonclinical student samples in the K-12 education sector, and eligible school health services studies were limited to empirical investigations that included a primary or secondary focus on mental health programs and services for children and/or adolescents (Donovan & Spence, 2000).

Structure of Literature Review

Three related lines of research were identified during the literature search process that appeared most germane to the study topic and that provided a framework for organizing the studies selected for this review: (a) school stress prevention intervention research, (b) school intervention process evaluation research, and (c) school health services research. While the current study falls under the rubric of school health services research (Teich et al., 2007; U.S. Department of Health & Human Services, Agency for Healthcare Research and Quality, 2009; Werthamer-Larsson, 1994), recent empirical evaluations related to stress prevention programming development and school intervention process factors were also covered in the review, as they provided additional empirical insights that justified the three research questions that guided this study (see Table 1).

With that said, the three main lines of empirical research identified during the literature search process provided the conceptual structure required for this literature review. For example, studies on mind-body interventions for preventing stress in students were organized under the section heading of stress prevention intervention

research based on the high level of conceptual congruence between this section heading and the focus of identified mind-body intervention studies. Similarly, identified school health services studies were organized under the main section heading of school health services research for the same reason. In addition, subheadings were used in each main section of this literature review as needed to accommodate the broad range of intervention and health services studies found in the literature. This writing strategy was employed in an effort to provide a coherent presentation of the empirical literature related to school-based stress prevention practices.

School Stress Prevention Intervention Research

This initial section of the literature review focuses on outcome studies related to programming innovations in school stress prevention, which are intended for use in schools and designed to reduce stress in general student populations (Jaycox et al., 2005; Jaycox et al., 2009; Lau & Hue, 2011). In an effort to provide an organizational format for this discussion that promotes textual coherence and aids in the interpretation of findings, identified studies have been arranged by program type and their outcomes interpreted using the *standards of evidence* model developed by the Society for Prevention Research (SPR; Flay et al., 2005). This program evaluation scheme has been recognized by leaders in the field of school-based preventive intervention research (Eacott & Frydenberg, 2008; Greenberg et al., 2005; Neil & Christensen, 2007; Spence & Shortt, 2007), and comprises three rank-ordered classification categories for use in assessing the empirical status of preventive interventions:

- *Efficacious.* An efficacious program has been shown to do more good than harm when assessed in an experimental setting under optimal conditions of implementation and participant intervention exposure (Flay, 1986; Flay et al., 2005; Greenberg et al., 2005). The efficacy trial forms the basis for designating innovative prevention programs as *evidence based* and for developing *best practices* guidelines for clinical practice (Greenberg et al., 2005). The designation's main limitation is that it denotes a program that has not yet undergone testing under real-world (e.g., classroom) conditions (Flay et al., 2005).
- *Effective.* An effective program is an efficacious intervention that has undergone further testing under real-world conditions (e.g., schools) with naturally occurring constraints, and has been shown to do more good than harm (Flay et al., 2005; Greenberg et al., 2005).
- *Ready for Broad Dissemination.* This designation is for an effective program that has undergone additional testing to determine how well it is implemented and sustained over time when taken to scale (disseminated) in a real-world setting (Elliott & Mihalic, 2004; Flay et al., 2005; Greenberg et al., 2005).

The scholarly value of the SPR model for discerning the empirical status of school-based stress prevention programs is best understood within the context of the current movement towards evidence-based policies and practices in preventive health care (Flay et al., 2005). This movement has included an agenda for the development and diffusion of evidence-based programs (EBPs) for preventing mental, emotional, and

behavioral disorders in children and adolescents (Anderson et al., 2006; O'Connell et al., 2009; Shea & Shern, 2011; U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, 2007), and has promoted the application of prevention science with students in educational settings (Stormont, Reinke, & Herman, 2010). With that said, the SPR model is used as an interpretive aid in this analysis of the stress prevention intervention literature.

Coping Skills Training Programs

According to the intervention research literature, Coping Skills Training (CST) programs are designed to teach people adaptive skills for managing situations that can trigger stressful reactions (Forman, 1993; Grey, 2011; Grey et al., 2009; Kleinke, 2002). Within the context of schools, CST programs have focused on helping children and adolescents acquire new skills for effectively managing school-based stressors such as course work, peer conflicts, and extracurricular activity-related demands (Forman, 1993; Forman & O'Malley, 1985). The development of this preventive intervention model was influenced by social learning theory (Grey et al., 2009), which is grounded in the notion that one's thoughts about his or her ability to successfully perform a specific task or action in a given situation (self-efficacy) is a modifiable self-valuation belief that is subject to change either through psychotherapeutic means or through an individual's experiences of mastery in everyday life (Bandura, 1977). Thus, the main goal of stress-related CST programs for children and youth is to enhance their beliefs about their ability

to effectively cope with stress by providing opportunities to learn and rehearse new skills for dealing with daily life challenges (Forman, 1993; Grey et al., 2009).

With that said, a handful of studies were found for the coverage time frame (2002-2012) under consideration in the CST literature search process. This group of studies includes a number of CST programs that are distinguishable from one another on the basis of certain characteristics such as program name, designated intervention target(s), program delivery format, the country of origin in which an intervention was developed, and the types and combinations of coping strategies emphasized in the training process. It is further noteworthy that identified studies had a prevention-oriented focus and a primary goal of improving students' capacity to cope with everyday stressors.

Programs targeting children. One recent evaluation of an innovative CST intervention for preventing stress in children was undertaken with fifth- and sixth-grade students in the Netherlands. In this cluster randomized controlled trial, researchers evaluated the efficacy of Learn Young, Learn Fair, a universal prevention program designed to enhance the coping flexibility of children through its emphasis on stress awareness and skill development in the areas of problem solving, social support seeking, and emotion-focused coping (Kraag, Van Breukelen, & Hosman, 2009). The child participants were randomly assigned to either the immediate intervention condition or the delayed intervention condition, and outcome assessments were performed on the students at pretest, posttest, and again at the 9-month postintervention follow-up. In this CST evaluation study, positive short and long-term program effects were found for stress

awareness and emotion-focused coping among children in the intervention group (Kraag et al., 2009).

Similar program effects were also reported in a published U.S. study involving an evaluation of I CAN DO IT, a brief school-based CST intervention for increasing children's use of emotion-focused coping skills (Pincus & Friedman, 2004). In this randomized controlled efficacy trial, the student participants were randomly assigned to one of three 75-minute, one session intervention conditions that included (a) problem-solving skills training, (b) cognitive-affective skills training, and (c) the discussion control group. All of the children received pre and postintervention outcome assessments that measured the differential effects of the three training conditions on their subsequent use of specific coping strategies, and the results indicated that the cognitive-affective skills training group exhibited a greater increase in the use of emotion-focused coping strategies than students in the problem-solving and control groups (Pincus & Friedman, 2004). This finding provided initial evidence of the program's value in promoting children's use of emotion-focused coping strategies.

Other relevant empirical work has focused on the evaluation of Zippy's Friends, a teacher-facilitated preventive CST program that integrates problem solving, social skills, and emotional learning to expand school-age children's repertoire of coping skills and capacity to adapt their coping patterns to the demands of different situations (Mishara & Ystgaard, 2006). The 24-week classroom-based program is a revised version of an adolescent suicide prevention program that was originally developed in Denmark in the 1990s, and found to be ineffective in changing the coping behaviors of children (Mishara

& Ystgaard, 2000). In the revised program, which places a greater emphasis on stress-related coping instruction, fictional stories involving young children and an imaginary insect named Zippy are used as a means of illustrating stressful situations and teaching students about the importance of communicating with others about their feelings, listening to others, and giving and receiving help during times of stress (Clarke, 2011; Mishard & Ystgaard, 2006). Empirical evaluations of the program in Europe, Asia, and in North America have demonstrated its effectiveness in expanding the range of adaptive coping skills in six and seven-year old children (Bale & Mishara, 2004; Clarke 2011; Dufour, Denoncourt, & Mishara, 2011; Mishara & Ystgaard, 2006; Monkeviciene, Mishara, & Dufour, 2006; Wong, 2008).

Summary. Based on the current empirical literature on Zippy's Friends, it appears evident that this innovative CST program meets SPR criteria for classification as a school-based intervention that is ready for broad dissemination (Flay et al., 2005). In addition to the existing body of evidence supporting its evidence-based designation, Clarke (2011) reported that over 300,000 children in 16 countries have participated in the program to date, and Zippy's Friends is recognized by international healthcare organizations as an established evidence-based program for promoting the mental health of schoolchildren worldwide (World Federation for Mental Health & World Health Organization, 2004).

The other CST programs described previously are best regarded at this time as possibly efficacious programs, due to the limited evidence supporting their use in schools. More specifically, only one of the identified evaluations of the Learn Young,

Learn Fair program constituted a systematic evaluation of the program's effects on children's coping behavior (Kraag, Kok, Abu-Saad, Lamberts, & Fekkes, 2005; Kraag et al., 2009; Kraag et al., 2007). Similarly, only one outcome evaluation of I CAN DO IT was found in the literature. According to Flay et al. (2005), replication studies are required to confirm initial findings from efficacy trials before an innovative program can be considered for designation as an efficacious intervention.

Programs targeting adolescents. In the first of two identified Web-based program evaluations, researchers in Australia examined the efficacy of an innovative Internet-assisted CST program with a sample of eighth-grade students (Vliet & Andrews, 2009). The Internet-based course featured a cartoon narrative approach in which fictional characters encountered numerous stressors and modeled a variety of coping strategies that students could observe and vicariously learn from. The program objectives consisted of increasing students' knowledge about stress and coping, increasing adaptive coping and decreasing maladaptive patterns, improving general mental well-being, and improving students' perceived adaptive competence in stressful situations (Vliet & Andrews, 2009). In this program evaluation, significant training effects were found for knowledge about stress, support-seeking coping, general mental well-being, avoidant coping, total difficulties, and psychological distress (Vliet & Andrews, 2009).

In the second study, German researchers examined the efficacy of an Internet-delivered CST program for preventing stress in adolescent students (Fridrici & Lohaus, 2009). The participants in this program evaluation were randomly assigned to one of four experimental training conditions that included (a) online training in school, (b)

online home training, (c) face-to-face classroom training, and (d) the no-treatment control condition (Fridrici & Lohaus, 2009). All three active program conditions featured the same skill-based training objectives related to problem solving, cognitive reconstruction, social support seeking, relaxation, and time management. The results of the program evaluation indicated three significant training effects: (a) increased knowledge about stress and coping in all three intervention groups, (b) a decrease in psychological stress symptoms in the online-school and face-to-face training classes, and (c) greater student acceptance of face-to-face training in comparison to both online training conditions (Fridrici & Lohaus, 2009). These findings, in combination with the positive training effects reported in the Australian study, offer preliminary evidence of the potential value of Web-based CST training as an alternative to conventional teacher-facilitated intervention approaches for preventing stress in adolescents.

Other studies over the past decade have examined the Best of Coping (BOC) program for secondary school students. The BOC is an Australian CST program designed to promote resiliency in students by enhancing their optimistic thinking and problem-solving skills (Frydenberg & Brandon, 2007). The course features 10 training modules that emphasize productive forms of coping (e.g., positive thinking, goal setting, adaptive problem solving) as alternatives to nonproductive stress response patterns such as worry, self-blame, and avoidant coping behavior (Frydenberg & Brandon, 2007; Frydenberg et al., 2004).

The results of a series of four recent evaluations of the BOC at two metropolitan high schools in Australia indicate that the program has promise as a stress prevention

intervention for adolescent students—particularly those at increased risk for depression (Frydenberg et al., 2004). In three of the four BOC outcome evaluations reported by Frydenberg et al. (2004), program participants showed significant increases in productive coping and significant decreases in the use of nonproductive strategies, and at-risk students benefited most from the BOC course. The results further indicated that the real-world effectiveness of the BOC program is impacted by factors such as student gender, level of program implementation fidelity, and level and quality of collaborative effort between clinical staff and teachers during the program delivery process (Frydenberg et al., 2004).

In addition to these Australian BOC intervention trials, the program has undergone recent evaluation in dissertation studies conducted in the United States and Canada, respectively. In the published U.S. study, Fisher (2006) used a randomized controlled experimental design to examine the program's efficacy with a sample of female adolescents identified as being at-risk for stress-related adjustment problems. All subjects in the intervention group and control group were assessed before and after the intervention period, and the results indicated that participation in the BOC program was associated with a significant increase in the use of productive coping strategies (Fisher, 2006).

These results were later replicated in the dissertation-based program evaluation by Carter (2010), who utilized a randomized controlled quasi-experimental design in her investigation of the BOC's effects on at-risk adolescent students in Canada. In this recently completed study, students were recruited and assigned to either the intervention

or control group. Outcome data were collected on all participants at baseline, at the conclusion of the intervention period, and during a scheduled follow-up assessment using survey-based measures of stress, coping, perceived mastery, symptomatology, life satisfaction, and happiness. The results of the evaluation indicated that program participation was associated with an increased use of adaptive coping strategies and a decreased use of negative coping mechanisms (Carter, 2010).

The other identified CST program evaluation involved adolescent students in a primary school in Hong Kong. The objective of the program was to promote positive coping behavior in Chinese youth, and it was designed as an educational activity that requires both student and parental participation to be successful (Fok & Wong, 2005). The initial phase of the program entailed the use of a focus-group interview format to promote discussion on the types of stressors students typically encounter and the ways in which they cope with them (Fok & Wong, 2005). The second intervention phase was an open-forum session with students and their parents, in which the program facilitator stimulated group discussion by summarizing the findings of the focus-group interviews and presenting didactic material to students and their parents on stress, coping, and adolescent development (Fok & Wong, 2005). The open-forum session provided the experiential basis for the program's effects by allowing students to share their experiences with stress and coping and obtain feedback from parents and peers on productive and nonproductive ways of handling stress (Fok & Wong, 2005). In evaluating the program's acceptability and effects, the researchers obtained feedback from students and their parents. The results indicated positive program effects related to

student thinking, self-esteem, relaxation activities, support seeking, and increased efforts to complete difficult academic tasks, and the parental feedback suggested a high level of family support for the program (Fok & Wong, 2005).

Summary. At the present time, it appears evident that the two Web-based CST programs discussed in this review are best classified as possibly efficacious interventions, as both programs require additional testing to establish their efficacy under current SPR guidelines (Flay et al., 2005). Similarly, at the same time that Fok and Wong's (2005) coping-skills training program shows promise with adolescent students, it also requires further empirical validation to meet established SPR criteria for classification as an efficacious intervention (Flay et al., 2005).

With regard to the BOC program, all but one of the seven identified program evaluations gathered evidence of the intervention's efficacy, and one study also demonstrated its clinical value as a stress prevention intervention under real-world classroom conditions (Frydenberg et al., 2004). Thus, on the basis of these findings, the BOC program appears worthy of classification as an efficacious CST program with additional evidence of effectiveness with adolescents in a naturalistic classroom setting (Flay et al., 2005).

Discussion. While current research provides empirical insights into CST-based stress prevention programs that have or are in the process of being validated for use in schools, the empirical status of CST as a stress prevention modality is best gauged within the context of the larger body of CST research that includes intervention studies conducted prior to 2002. For example, other school-based CST programs that have been

developed in recent decades include the Coping with Kids program, the Interpersonal Cognitive problem-Solving (ICPS) curriculum, the Rochester Child Resilience Project, the I Can Do program, and programmatic initiatives directed towards helping children cope with stressful school transitions (Durlak & Wells, 1997; Pincus & Friedman, 2004; Rones & Hoagwood, 2000). This body of literature suggests that several evidence-based CST programs have been developed for use with children and adolescents in educational settings.

Crisis Interventions

According to the school crisis intervention literature, leading academic researchers, professional healthcare organizations, and a number of federal agencies have expressed interest in recent years in school-based crisis prevention/intervention programming for children and adolescents (Adelman et al., 1999; Brock & Davis, 2008; Brock et al., 2009; Center for Mental Health in Schools at UCLA, 2008b; U.S. Department of Education, Office of Safe and Drug-Free Schools, 2007). As a student-centered stress prevention model, school crisis prevention denotes programming initiatives geared towards preventing the occurrence of crises (to the extent possible) and reducing psychological distress in children and youth in the aftermath of exposure to crisis events (Center for Mental Health in Schools at UCLA, 2008b; Jimerson, Brock, & Pletcher, 2005; MacNeil & Topping, 2007a).

In general, school crisis prevention activities to date have been multitiered efforts that include a combination of crisis management planning and preparation, crisis response team development and training, crisis education and skill building for students,

and the formation of collaborative partnerships between school systems, community agencies, students, and families (Center for School Mental Health Assistance, 2002a; Nickerson & Zhe, 2004). Such crisis preparation and response planning efforts have generally included the four main goals of (a) preventing and/or alleviating traumatic stress reactions in individuals experiencing a crisis, (b) preventing or mitigating dangerous coping behavior, (c) identifying individuals who may require more intensive intervention, and (d) helping individuals with increased psychological support needs obtain appropriate mental health services (Center for School Mental Health Assistance, 2002a; Jimerson et al., 2005; Morrison, 2007b).

Crisis prevention program evaluations. Although several school-based crisis prevention/intervention programs are discussed in the research literature, the body of information on crisis programming is largely descriptive and marked by program summaries and expert opinion on the clinical merits of specific crisis prevention/intervention models used in U.S. school systems (Jimerson et al., 2005; Knox & Roberts, 2005; MacNeil & Topping, 2007a, 2007b). For example, while the PREPaRE training curriculum has been touted as a best- practices model for school crisis prevention and intervention (Brock & Davis, 2008; Brock et al., 2009), no published studies to date have examined the training curriculum's efficacy in preventing or mitigating stress-related symptoms in schoolchildren exposed to crisis events. In fact, in the one published evaluation of the PREPaRE training curriculum identified in the literature, researchers examined the program's effects on clinicians' attitudes toward school crisis work rather

than its impact on student coping behavior during a crisis (Brock, Nickerson, Reeves, Savage, & Woitaszewski, 2011).

Similarly, there is limited empirical support for the use of the Critical Incident Stress Management (CISM) program with students in the aftermath of crisis events in schools. This controversial program model has been described as an integrated, multifaceted crisis intervention approach that consists of nine components for addressing the full temporal spectrum of a crisis: (a) pre incident preparation, (b) demobilizations and staff consultation, (c) crisis management briefing (d) defusing, (e) critical incident stress debriefing, (f) individual crisis intervention, (g) pastoral crisis intervention, (h) family CISM and organizational consultation, and (i) follow-up/referral (Everly, Jr. & Mitchell, 2000). The program was originally developed for and tested on adult emergency service personnel, and its efficacy as a school-based crisis intervention approach for children and adolescents has only recently been investigated (Morrison, 2007b).

In the first of two identified school-based CISM program evaluations, Morrison (2007a) examined teacher and staff perceptions of the intervention's value in improving the quality and effectiveness of crisis intervention services delivered by schools to students, faculty, and staff over a five-year period. The findings indicated that the CISM model had a positive impact on the work of crisis counselors in five key areas: (a) informing students about a crisis, (b) providing consultation to faculty and staff during a crisis, (c) informing parents about a crisis, (d) providing on-site didactic materials on ways of dealing effectively with a crisis, and (e) assisting schools in developing a plan of

action for responding to a crisis situation. However, teacher and staff ratings of the CISM program also suggested that its application in a school-based environment had little or no effect on students' coping behavior (Morrison, 2007a).

In the subsequent follow-up CISM evaluation study, Morrison (2007b) examined the social validity of the CISM model as judged by a sample of clinicians (i.e., psychologists, social workers, counselors, and nurses) who received training in the model prior to its implementation in an urban school district (Morrison, 2007b). The participants' views on the model's acceptability and usefulness in helping students cope with crises were recorded using a semistructured interview format. Three evaluation themes were subsequently identified in the interview transcripts: (a) the CISM model's goals and service delivery framework were acceptable to clinicians, (b) its application in schools resulted in socially significant outcomes for children and youth, and (c) CISM training improved participants' level of knowledge about crisis work with students (Morrison, 2007b).

Discussion. The limited evidence supporting the use of the PREPaRE and CISM models with children and youth in the school environment suggests that neither model currently meets established SPR guidelines for designation as efficacious stress prevention programs (Flay et al., 2005). However, despite the fact that the efficacy of current school crisis prevention/intervention models remains unclear at the present time, recent studies indicate that the vast majority of schools in the United States are nevertheless providing crisis-oriented services to students (Brener et al., 2001; Brener et al., 2007).

Mind-Body Interventions

As a clinical and scientific concept, mind-body therapy (MBT) denotes a core group of evidence-based psychosocial interventions that influence health outcomes through their effects on various physiologic processes (Astin et al., 2003; Dusek & Benson, 2009; Jacobs, 2001). Current MBT approaches of clinical interest are grounded in the theoretical notion that the brain, mind, and body interact in ways that directly affect human health (Smith et al., 2008). In this literature review, the following MBT subtypes met inclusion criteria and have been studied in relation to stress prevention efforts with children and adolescents in the school setting: (a) cognitive-behavioral therapy (CBT), (b) meditation, (c) relaxation training, and (d) eclectic approaches.

Cognitive-behavioral program evaluations. According to Astin et al. (2003), CBT is one of the more prominent MBT models used in clinical practice today. This traditional psychotherapeutic modality is based on the notion that cognitions, emotions, and behavior have interactive influences on the etiology, maintenance, and treatment of physical and mental health problems (Jacobs, 2001; Smith et al., 2008). CBT integrates cognitive and behavioral principles and methods (e.g., cognitive restructuring, exposure techniques) for the purpose of helping individuals modify maladaptive (symptom-producing) thought patterns shaped by negative past experiences (Ledley, Marx, & Heimberg, 2005; Kruczek & Salsman, 2006; Mueser et al., 2002). In the area of stress prevention, the goal of CBT is to teach people how to reframe and replace stress-inducing thoughts with healthier patterns of thinking that tend to decrease the stress response and promote resilient behavioral outcomes (Jacobs, 2001; Kruczek & Salsman, 2006; Smith

et al., 2008). In recent decades, CBT has become an integral component of school-based mental health practice with children and adolescents, and has also been an important focus of school-based stress prevention intervention research (Christner, Forrest, Morley, & Weinstein, 2007; Christner, Mennuti, & Pearson, 2009; Mennuti, Christner, & Freeman, 2006).

Programs targeting children. Three school-based CBT program evaluations were found for the time period under consideration in this review. In the first study, researchers examined the Bright Ideas program with children in primary schools in Victoria, Australia (Cunningham et al., 2002). As a theory-based program founded on the theoretical work of Albert Ellis and Martin Seligman, Bright Ideas was designed to build children's coping resources through training in four basic optimistic thinking skills: (a) listening to one's self talk, (b) evaluating its accuracy, (c) generating alternative attributions, and (d) challenging catastrophic thinking. According to Cunningham et al. (2002), the program was designed to develop adaptive cognitive skills in children through a combination of storytelling, cartoons, hypothetical examples, cognitive skills-based practice, and role playing exercises.

The results of the Bright Ideas program evaluation indicated significant intervention effects on outcomes related to coping efficacy, depressive attributions, and usage of nonproductive strategies among children in the intervention group, but there was no evidence of program effectiveness in changing children's use of productive coping strategies (Cunningham et al., 2002). These results extended the findings of earlier research on Bright Ideas by Cunningham, Brandon, and Frydenberg (1999), in which

children reported significant increases in optimistic thinking and coping self-efficacy and decreased usage of nonproductive coping strategies.

Another identified school-based CBT program is the Children at War: Teaching Recovery Techniques program, which was designed to educate students about trauma-related PTSD symptoms and to teach them productive coping strategies for dealing with traumatic experiences (Ehntholt, Smith, & Yule, 2005). In a recent evaluation of the program's feasibility and efficacy as a school-based preventive intervention, researchers examined its effects with war-exposed refugee students from inner-city schools in London. The children in the 6-week pilot study were recruited and randomly assigned to either the CBT intervention group or a waitlist control condition, and both groups were assessed at baseline, immediately following the intervention period, and at the 2-month follow-up. The results showed significant between-group differences related to PTSD symptom severity at posttreatment, but the intervention group's treatment gains were not reportedly maintained over the subsequent 2-month follow-up period (Ehntholt et al., 2005).

The Teaching Recovery Techniques program was also recently tested with Palestinian schoolchildren exposed to conditions of shelling during the 2008-2009 Israeli-Palestinian conflict (Qouta, Palosaari, Diab, & Punamaki, 2012). In this cluster randomized controlled trial, two schools were randomly selected from each of the two areas of Gaza involved in the war, and four classrooms of children (two boys' classrooms and two girls' classrooms) were randomly selected from each school. One class of boys and one class of girls from each selected school were randomly assigned to the

intervention condition, and the remaining four gender-based classes were assigned to the waitlist control condition (Qouta et al., 2012). All of the children received baseline, postintervention, and 6-month follow-up assessments that measured posttraumatic stress symptoms, depressive symptoms, and levels of psychological distress, and outcome data on the full sample indicated an absence of significant intervention effects. Additional postintervention subgroup analyses revealed significant intervention effects on posttraumatic stress symptoms in boys, but these program effects were not reportedly maintained at the 6-month follow-up (Qouta et al., 2012).

Summary. The available evidence suggests that the child-specific CBT programs covered in this review are best categorized as experimental programs at this time, as they do not yet meet SPR evidence standards for designation as efficacious school-based preventive interventions (Flay et al., 2005). More specifically, although the two outcomes studies conducted on the Bright Ideas program to date provide evidence of its effectiveness with children, the original program evaluation was not a controlled trial. Thus, Bright Ideas appears to require further study to establish its efficacy status (Cunningham et al., 1999; Flay et al., 2005). Likewise, the Teaching Recovery Techniques intervention appears to warrant designation as an unproven program due to the mixed nature of the results obtained on its effects with children to date.

Programs targeting adolescents. In the lone identified outcome evaluation of a school-based CBT program for adolescents, researchers in Europe examined the efficacy of the Anti Stress Training (AST) program with students from two junior high schools in rural areas of Graz, Austria (Hampel, Meier, & Kümmel, 2008). The AST program, which integrates core cognitive-behavioral treatment elements with experiential education, was examined using a four-factorial experimental design. According to Hampel et al. (2008), their two main research objectives were to (a) assess the AST's effects on perceived stress, interpersonal coping, and self-efficacy in early and middle adolescents, and (b) examine the moderating effects of participant age and gender on the designated outcome variables. The participants in this controlled 6-week intervention trial were evaluated before, immediately after, and 3 months after the experimental intervention. Adolecents in the experimental group were found to have higher perceived self-efficacy, lower perceived stress, and more adaptive coping in comparison to the control group. In addition, early adolescents were found to benefit most from the AST program (Hampel et al., 2008).

Summary. Based on the fact that only one AST efficacy trial was found in the literature, there is not enough empirical data on the intervention's effects at this time to establish its efficacy status as a school-based stress prevention intervention for adolescent students. Again, under current SPR guidelines, an efficacious prevention program is one that has been tested and shown to be effective in at least two rigorous trials (Flay et al., 2005).

Programs targeting both children and youth. Recent empirical work on CBT programs targeting children and adolescents has centered largely on a preventive intervention known as Cognitive-Behavioral Intervention in Schools (CBITS), a manualized 10-session program that utilizes standard CBT techniques in a group format to prevent and mitigate the negative psychological, emotional, and behavioral aftereffects of violence exposure in children and youth (Jaycox et al., 2010: Kataoka et al., 2006; Kataoka et al., 2003; Morsette et al., 2009). As an indicated type of preventive intervention, its main clinical application is with trauma-exposed students whose symptoms have not yet progressed to the point of warranting a formal diagnosis of PTSD (Cohen et al., 2009; Jaycox et al., 2005; Jaycox et al., 2010; Stein, 2003). Its development and current empirical standing are attributable to the joint efforts of the RAND Corporation, the University of California-Los Angeles, and the Los Angeles Unified School District (LAUSD) to improve mental health services for recent immigrant students affected by community violence (Jaycox et al., 2005).

A search of the empirical literature uncovered several recent evaluations of CBITS with multicultural student populations. The earliest of these trials involved a pilot study by Kataoka et al. (2003), in which the researchers investigated the program's feasibility and acceptability with traumatized immigrant Latino students in grades three through eight in the LAUSD. The participants in this controlled quasi-experimental study were assigned to either the immediate intervention group or the waitlist comparison group, and participants received baseline and postintervention assessments. In this initial program evaluation, Kataoka et al. (2003) produced evidence of the intervention's

implementation feasibility, acceptability, and effectiveness in reducing trauma-related PTSD and depressive symptoms in Latino children and youth. These findings were later confirmed in a follow-up randomized controlled trial by Stein et al. (2003), and in recent studies by Feldman (2007) and Morsette et al. (2009). Taken together, these published trials yielded evidence of the intervention's efficacy with trauma-exposed children and youth from diverse cultural backgrounds.

In other related empirical work, researchers in Louisiana examined the differential effects of two components of a tiered CBT program for traumatized schoolchildren in an intervention trial known as Project Fleur-de-lis (PFDL). In this randomized uncontrolled program evaluation, Jaycox et al. (2010) compared the effects of CBITS and Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) in a sample of at-risk schoolchildren with elevated PTSD symptoms stemming from exposure to Hurricane Katrina and other traumatic life events. The students in this school/clinic-based program evaluation were recruited from three public schools in the New Orleans area, and all participants received pre and postintervention assessments that measured symptoms of PTSD and depression (Jaycox et al., 2010). The PFDL program was found to have a positive impact on students' stress-related symptom levels, and the findings confirmed the results of an earlier case study involving the treatment of two students traumatized by exposure to Hurricane Katrina (Cohen et al., 2009; Jaycox et al., 2010).

Another identified study involved a feasibility and acceptability evaluation of an adapted CBITS intervention known as Support for Students Exposed to Trauma (SSET) (Jaycox et al., 2009). This adapted CBITS program is intended for use by teachers and

other nonclinical school-based personnel, and was developed in response to requests from school districts for a trauma-focused intervention that does not require implementation by trained mental health personnel (Jaycox et al., 2009). In this pilot project, the SSET program was tested at two middle schools in the San Fernando Valley area of Los Angeles using three teachers and one school counselor as facilitators. The participants in each middle school (sixth- through eighth-grade students) were randomly assigned to either the immediate intervention group or the delayed intervention group, and outcome measures were administered to students at baseline, at 3 months after the immediate group completed the SSET, and again at 6 months after the delayed group received the intervention (Jaycox et al., 2009). The results of the study confirmed the SSET's implementation feasibility and acceptability to students and their parents, and provided initial evidence of its value as a school-based intervention for reducing emotional and behavioral symptoms in trauma-exposed children and youth (Jaycox et al., 2009).

The other identified classroom-based CBT study entailed an evaluation of a group intervention for children and adolescents exposed to war (Karam et al., 2008). The participants in this quasi-experimental intervention trial were students from six public schools located in six villages designated as the most heavily war-exposed areas of Southern Lebanon. The intervention and control groups were matched by age, gender, and degree of war exposure, and all students received prewar, 1 month postwar, and 1 year postwar assessments focused on stress-related symptoms of anxiety and depression (Karam et al., 2008). The tested program consisted of standard CBT techniques combined with a multifaceted form of CBT called Stress Inoculation Training (SIT), and

the program was delivered to students by full-time teachers during daily 60-minute sessions over a 12-day period. The results of the evaluation indicated an absence of positive intervention effects on students' postwar adjustment (Karam et al., 2008).

Summary. The scientific literature on school-based CBT programs for children and adolescents indicates that CBITS is an established stress prevention intervention that warrants designation as an efficacious program with additional evidence of effectiveness under real-world classroom conditions. However, its programmatic derivative, the SSET, has not yet undergone a sufficient level of testing to confirm its public health value in the area of stress prevention (Flay et al., 2005). Similarly, the hybrid CBT intervention tested by Karam et al. (2008) was not shown to be useful in preventing adjustment problems in war-exposed children and youth.

Discussion. Although current research indicates that the strength of the evidence supporting specific school-based CBT interventions for preventing stress in children and/or adolescents varies considerably across the spectrum of available CBT programs, there is widespread scientific agreement on the efficacy of the CBT model in general for reducing the harmful effects of negative stress exposure in young people. More specifically, according to the findings of recent systematic reviews of psychosocial treatments for trauma-exposed children and adolescents, individual and group-based CBT approaches are the only tested programs to date that have met evidence-based criteria for classification as well-established or probably efficacious interventions for traumatic stress and trauma-related disorders (Nilamadhab, 2011; Silverman et al., 2008;

Smallwood, Williams, & McDonald, 2006; U.S. Task Force on Community Preventive Services, 2008; Wethington et al., 2008).

Meditation program evaluations. According to Walsh and Shapiro (2006), the term *meditation* denotes a class of self-regulation methods that emphasize attention and awareness training as a pathway to greater voluntary control over one's cognitive processes and general state of mental and physical well-being. Research over the past 40 years has confirmed that meditative practices can produce positive health effects by promoting desirable changes in psychological and physiological functioning (Hart, 2007). While researchers have largely studied meditation health effects in adults, they have also turned their attention in recent years to the application of meditative techniques with children and adolescents in educational, clinical, and community-based settings (Black, Milam, & Sussman, 2009). Within the educational domain, current research has included investigations of both sitting and physical-movement forms of meditative practice for preventing the occurrence of stress in general student populations (Black et al., 2009; Mind and Life Education Research Network et al., 2012).

In recent school-based sitting meditation research, scientists have evaluated both concentrative and contemplative forms of sitting meditative practice. These meditative techniques are distinguished in the scientific literature on the basis of their respective attention and awareness training emphases. More specifically, while concentrative techniques such as silently repeating a word or phrase (mantra) or concentrating on a particular mental image are intended to promote relaxation by narrowing of one's attentional focus, contemplative meditative interventions emphasize the opening and

expanding of moment-to-moment awareness of one's thoughts, feelings, and perceptions in a manner that is nonjudgmental and nonpurposive (Astin et al., 2003; Cahn & Polich, 2006; Hart, 2007; Shapiro, Brown, & Astin, 2008). According to Thompson and Gauntlett-Gilbert (2008), it is through the process of developing a nonjudgmental present-moment awareness of the world and one's reactions/responses to it that a person learns to become less stress reactive and more flexible and adaptive under conditions of stress.

Other related research on meditative practices for stress prevention in schools has centered on the Eastern movement forms of Tai chi and yoga, which promote psychosocial well-being through mindful body movements and postures (Black et al., 2009; Brown & Leledaki, 2010). Although studies to date have focused on the feasibility, acceptance, and effectiveness of these movement-based meditative techniques in educational settings, the present discussion is limited to empirical work on yoga, as recent empirical evaluations of Tai chi have not examined its efficacy as a stand-alone movement-based meditative intervention. Rather, studies to date have examined Tai chi as an integrative treatment component that is used in conjunction with other therapeutic techniques to prevent stress in children and adolescents. Thus, recent empirical work on Tai chi is presented in the eclectic MBT section of this review.

Programs targeting children. Five recent evaluations of school-based meditative interventions targeting children were identified in the literature. The first study evaluated the efficacy of the Mindfulness-Based Stress Reduction (MBSR) program for reducing stress in school-age girls. According to White (2012), the MBSR program combined

mindfulness training with Hatha yoga techniques. In this cluster randomized controlled efficacy trial, two public schools were randomly assigned to either the mindful yoga intervention or waitlist control condition, and pre and postintervention assessments were performed on all participants at each location (White, 2012). The results of the program evaluation indicated an absence of significant between-group differences on measures of perceived stress, coping, self-esteem, and self-regulation. In addition, the girls who received the intervention reported higher levels of perceived stress and a greater frequency of coping behavior than children assigned to the control condition (White, 2012).

In another related pilot study, researchers used a qualitative evaluation method to investigate the efficacy of MBSR with Catholic schoolchildren in one diocese in Queensland, Australia (Campion & Rocco, 2009). In this preliminary program evaluation, a sample of 54 students was randomly drawn from three participating schools, and the three study groups were given different levels of the MBSR intervention during the 4-week intervention period (Campion & Rocco, 2009). Qualitative outcome data were collected from students, parents, and teachers by way of semistructured interviews, and all interviews were audiotaped and professionally transcribed (Campion & Rocco, 2009). Thematic content analyses were performed on the interview transcripts, and the findings revealed four general MBSR intervention effects: (a) socioemotional well-being, (b) relaxation and calming, (c) emotional regulation and stress reduction, and (d) improved concentration and classroom behavior (Campion & Rocco, 2009).

Other researchers evaluated a school-based mindfulness yoga intervention in four public elementary schools in the city of Baltimore (Mendelson et al., 2010). In this randomized controlled efficacy trial, students from the four selected schools were randomly assigned to either the immediate intervention or the delayed intervention control condition. Children in two of the schools received the 12-week intervention during the first phase of the study, and students in the other two schools received mindfulness-yoga training after the immediate intervention groups completed the program (Mendelson et al., 2010). The quantitative outcome measures assessed students' stress responses, affective symptoms, and peer relations, and qualitative outcome data were gathered from students, teachers, and administrators by way of focus group interviews at each intervention school. According to Mendelson et al., their findings indicated that the mindfulness yoga intervention was feasible to implement, acceptable to students, teachers, and administrators, and showed promise as a stress prevention intervention for children.

In another study, researchers at Ohio State University evaluated a yoga intervention for reducing stress and improving classroom behavior in students identified as being at-risk for academic and social problems (Case-Smith, Sines, & Klatt, 2010). In this qualitative program evaluation, a convenience sampling procedure was used to recruit participants from one third-grade class in a public school located in a socioeconomically disadvantaged urban neighborhood (Case-Smith et al., 2010). The tested program consisted of yoga poses and exercises, meditation, and slow breathing, and the children were interviewed in small focus groups at the conclusion of the 8-week

yoga training period. According to Case-Smith et al., three positive outcome-related themes emerged from the interview transcripts: (a) increased student calmness and focus, (b) improved coping-related self-regulatory skills, and (c) enhanced self-esteem.

The other identified study involved the evaluation of a mindfulness-based movement program called Brain GymRTM with a convenience sample of sixth-grade classrooms in a suburban elementary school in southern California (Voss, 2006). The Brain Gym program features 26 mindfulness-based movement techniques designed to enhance mental abilities and promote calmness and relaxation (Voss, 2006). During the evaluation process, students in the intervention classroom received the program twice daily over a 2-week period in which they prepared for and completed the state of California's standardized achievement tests (the STAR examinations), and children in the control classroom went through the same STAR preparation and examination process without receiving the intervention. Pre and postintervention stress assessments were performed on both study groups, and no significant training effects were found for the Brain Gym program (Voss, 2006).

Summary. Based on the mixed nature of the MBSR results reported in the literature to date, it appears evident that the mindfulness meditation model requires further testing to verify its efficacy as a school-based stress prevention intervention for children (Flay et al., 2005). In contrast, current evidence suggests that yoga is a promising stress prevention method for children in educational settings (Flay et al., 2005). With regard to the Brain Gym program, the findings of the one identified program evaluation do not support its use with schoolchildren at the present time.

Programs targeting adolescents. In a just-completed pilot study on the mental health benefits of yoga, researchers in Massachusetts evaluated the intervention's effectiveness as a universal stress prevention strategy with adolescents in a secondary school setting (Khalsa, Hickey-Schultz, Cohen, Steiner, & Cope, 2012). The students in the controlled randomized intervention trial were assigned to either the yoga education (ED) intervention group or the physical education (PE) classes-as-usual group, and all participants were given baseline and postintervention assessments (Khalsa et al., 2012). Significant intervention effects were reported for anger control, resilience, and fatigue/inertia, but no significant between-group differences were found by the researchers on any of the measured dimensions of perceived stress. Khalsa et al. (2012) noted that the yoga group's favorable resilience outcome score in comparison with the control group suggests a possible role for yoga in helping adolescent students cope with everyday stress.

Another recent pilot study examined the effects of yoga on stress, depression, and health-related quality of life in a nonclinical, biethnic sample of adolescent students (Beets & Mitchell, 2010). During the 4-week intervention trial, students in two mandatory PE classes that agreed to participate in the study received either 2 weeks of yoga followed by 2 weeks of no treatment—or vice versa (Beets & Mitchell, 2010). Outcome assessments were performed on all participants at baseline and at the end of each 2-week intervention period, and significant intervention effects were found for physical health, general well-being, self-esteem, and perceived stress (Beets & Mitchell, 2010).

In other research, Chinese scientists evaluated the efficacy of MBSR for enhancing well-being and reducing stress in adolescent students at two secondary schools in Hong Kong (Lau & Hue, 2011). A nonclinical sample of Chinese students was randomly assigned to either the intervention or control group, and measurements of well-being, stress, and depressive symptomatology were taken on all participants before and immediately following the 6-week intervention period (Lau & Hue, 2011). According to Lau and Hue, the intervention produced positive effects on the well-being dimension of personal growth and on symptoms of depression in the experimental group, but no significant MBSR-related effects were found on any of the measured dimensions of perceived stress.

Summary. Based on the findings of these recent meditation program evaluations, it appears evident that both MBSR and yoga require additional testing to verify their efficacy as stress prevention interventions for adolescent students, as current SPR standards dictate that innovative programs have a minimum of two rigorous trials in which their effectiveness has been demonstrated to qualify for designation as EBIs (Flay et al., 2005).

Discussion. Although there is little published research to date on the effectiveness of school-based meditative practices for reducing stress in students, a growing number of researchers and health care professionals are nevertheless promoting the use of meditative approaches with chronically stressed children and youth based on evidence derived from research on adults (Birdee et al., 2009; Greenberg & Harris, 2012; Mendelson et al., 2010; Saltzman & Goldin, 2008; Thompson & Gauntlett-Gilbert, 2008;

Wisner, Jones, & Gwin, 2010). The growing acceptance of meditative practices with young people has also been fueled by the emergence of data on the efficacy of school-based meditation programs for common problems such as anxiety, negative mood states, and behavioral disturbances stemming from poor executive control (Birdee et al., 2009; Flook et al., 2010; Kaley-Isley, Peterson, Fischer, & Peterson, 2010; Matthews, 1989; Mind and Life Education Research Network et al., 2012; Noggle, Steiner, Minami, & Khalsa, 2012; Semple, Reid, & Miller, 2005; Serwacki & Cook-Cottone, 2012). Thus, while the level of enthusiasm for stress-related meditative practices with students appears to exceed the body of evidence supporting their use in schools at this time (Birdee et al., 2009; Black et al., 2009), there is growing societal awareness of the need for such programming to enhance the capacity of children and adolescents to cope with life stress (Mendelson et al., 2010; Napoli et al., 2005; White, 2012; Wisner et al., 2010).

Relaxation training program evaluations. As a scientific concept, *relaxation training* is distinguished from meditation in the research literature on the basis of its primary clinical focus. More specifically, while meditation-induced relaxation is regarded as an indirect clinical effect rather than the primary objective of meditative activities, relaxation training methods involve intentional efforts to elicit a psychophysiological state of hypo-arousal (Astin et al., 2003; Jain et al., 2007; Shapiro et al., 2008). Relaxation training has also been distinguished from meditation on the basis of its common usage as a stress-specific MBT (Shapiro et al., 2008).

In recent decades, researchers have examined the utility of different relaxation training techniques for children and adolescents with stress-related problems such as

insomnia, headaches, test anxiety, behavioral and emotional challenges, and learning difficulties (Bornmann, Mitelman, & Beer, 2007; Goldbeck & Schmid, 2003; King, Ollendick, Murphy, & Moloy, 1998; Lohaus, Klein-Hessling, Vogele, & Kuhn-Hennighausen, 2001; Margolis, 1990; Matthews, 1989; Monaco, 1982; Reiff, 2003; Ritcher, 1984). However, while relaxation training methods are currently recognized as evidence-based MBTs for children and adolescents with stress-related problems (Chorpita & Daleiden, 2009), the research literature indicates that only one recent study has examined the effects of relaxation training as a primary school-based stress prevention strategy.

Programs targeting children and youth. In a recent relaxation training program evaluation, researchers in Germany investigated the differential effects of three relaxation strategies (i.e., sensoric relaxation training, imaginative relaxation, and combined training) on the stress-related symptoms of elementary and secondary school students (Lohaus & Klein-Hebling, 2000). In their controlled quasi-experimental study, Lohaus and Klein-Hebling (2000) used student classroom affiliation in place of a random assignment strategy to prevent the child participants from sharing their training experiences with one another during the active intervention period. In addition, the researchers added non tension-producing stories and outcome measurements without any type of intervention as control conditions (Lohaus & Klein-Hebling, 2000).

According to Lohaus and Klein-Hebling, all study participants were assessed at baseline, at posttreatment, and again 2 months after the intervention with a questionnaire that recorded subjective judgments of mood (i.e., degree of subjective calmness) and

somatic condition (i.e., calmness of heart rate; Lohaus & Klein-Hebling, 2000). Wrist-blood-pressure and ear-temperature devices were also used to obtain objective measurements of physiological outcome variables (i.e., systolic blood pressure, body temperature, and pulse rate; Lohaus & Klein-Hebling, 2000). The program results indicated significant training effects for all measured outcome variables. Although statistically significant differences were also found for the three relaxation training conditions related to blood pressure, pulse rate, mood, and somatic condition, Lohaus and Klein-Hebling reported that their overall results indicated that none of the tested relaxation training methods were clinically superior in general.

Summary. While the positive results obtained by Lohaus and Klein-Hebling (2000) are not sufficient to establish the efficacy of relaxation training for children and adolescents in educational settings, it is important to point out that past research has also shown relaxation training to be a useful school-based stress prevention strategy (Hiebert, Kirby, & Jaknavorian, 1989; Matthews, 1989; Parrott III, 1990). Taken together, these findings suggest that relaxation training is an efficacious MBT model for use with young people in the school environment (Flay et al., 2005).

Discussion. Although the empirical literature indicates that additional testing of specific relaxation techniques is warranted to more fully establish their usefulness in school-based stress prevention efforts, it is noteworthy that relaxation training is a highly regarded mind-body approach for treating various health conditions caused or exacerbated by stress (Jacobs, 2001). More specifically, research suggests that relaxation training is a useful adjunctive intervention for children and adolescents with learning

difficulties, psychiatric conditions, and general medical problems (Engle, 1991; Ewart et al., 1987; Goldbeck & Schmid, 2003; Kacprowicz, Jr., 2008; King, Cranstoun, & Josephs, 1989; Larsson & Melin, 1986; Lopata, 2003; Margolis, 1990; Platania-Solazzo, et al., 1992; Richter, 1984). In addition, relaxation training has been described in the literature as a promising mind-body modality for helping students cope with stress (Benson et al., 2000; Hiebert, 2002; Kacprowicz, Jr., 2008).

Eclectic program evaluations. Other research has centered on the evaluation of eclectic school-based programs that feature a combination of treatment elements drawn from different mind-body intervention approaches. Based on the technical descriptions of these multicomponent programs provided in the literature, their core therapeutic elements appear to have been combined in an ad hoc manner and without regard to an overarching conceptual or theoretical framework that supports their integration and application in school-based stress prevention efforts with students (Hollanders, 2003; Norcross & Beutler, 2008). With that said, a search of the extant literature yielded a small number of eclectic MBT studies that met inclusion criteria for this review.

Programs targeting children. The one identified study involved the evaluation of an eclectic school-based intervention for preventing and treating stress-related symptoms in Israeli children exposed to terror attacks over a 30-month time period (Berger, Pat-Horenczyk, & Gelkopf, 2007). In their randomized controlled intervention trial, Berger et al. (2007) tested the Overshadowing the Threat of Terrorism (OTT) program with a sample of schoolchildren who were randomly assigned to either the OTT intervention or the waitlist control condition. The program incorporated elements of CBT, art therapy,

body-oriented strategies, and narrative approaches, and the OTT training process consisted of eight weekly sessions conducted in the students' social studies classes (Berger et al., 2007). All participants were assessed 1 week before and 2 months after the intervention using a questionnaire that measured the following outcome variables of empirical interest: (a) objective and subjective exposure to terrorism, (b) PTSD symptomatology, (c) social functioning, (d) somatic complaints, and (e) anxiety symptoms. The findings of the program evaluation indicated significant training effects for students who participated in the intervention (Berger et al., 2007).

Summary. Although these initial results appear promising, there is no indication in the extant literature that the OTT program has undergone further evaluation to substantiate the preliminary findings of Berger et al. (2007). Thus, based on current SPR guidelines, it is evident that the OTT program requires additional testing to verify its empirical status as an eclectic school-based stress prevention intervention for children (Flay et al., 2005).

Programs targeting adolescents. According to the literature, there have been two recent evaluations of eclectic school-based interventions for reducing stress in adolescent students. In the first published study, Gelkopf and Berger (2009) tested a teacher-mediated prevention program called ERASE-Stress (ES) with a sample of Israeli youth who had been exposed to war, acts of terror, or major natural disasters. The ES program consisted of twelve 90-minute sessions administered to students by their homeroom teachers, and included a combination of psychoeducational material, meditative training, and narrative techniques for helping students reprocess and cope with traumatic

experiences (Gelkopf & Berger, 2009). In their controlled quasi-experimental trial, Gelkopf and Berger randomly assigned male students in a religious middle school to either the ES intervention or a waitlist control group. The participants received assessments at baseline and 3 months after the ES intervention with a tailored questionnaire that measured objective and subjective dimensions of terrorism exposure, PTSD, somatic complaints, fear, and overall level of functioning. The results indicated that students in the ES training group experienced significant reductions on all measured outcome variables (Gelkopf & Berger, 2009).

In the second identified study, Foret et al. (2012) evaluated the feasibility, acceptability, and efficacy of a Relaxation Response (RR) curriculum with high school students in Massachusetts. The tested program was based in part on the pioneering work of Dr. Herbert Benson and his colleagues, whose groundbreaking research in the 1970s on the physiological effects of transcendental meditation led to the discovery of the human *relaxation response* (Benson, 1975; Foret et al., 2012; Wallace, Benson, & Wilson, 1971). In this controlled quasi-experimental program evaluation, the intervention group received the following combination of relaxation exercises over the course of eight in-class training sessions: (a) meditation, (b) breath focus, (c) progressive muscle relaxation, (d) imagery/visualization, and (e) yoga (Foret et al., 2012). In addition, the participants were provided with didactic information on stress awareness and given cognitive restructuring exercises to enhance their ability to identify and modify maladaptive thought patterns that trigger or exacerbate stress reactions. They also completed homework assignments involving the use of guided meditation audio tracks

(Foret et al., 2012). Student outcomes were assessed through pre and postintervention measurements of perceived stress, state-trait anxiety, health-related lifestyle, self-esteem, and locus of control. The main findings of clinical interest included reductions in perceived stress and anxiety and significant increases in health-promoting behavior (i.e., spirituality and stress management) among students who completed the RR program (Foret et al., 2012).

Summary. As with several other school-based stress prevention interventions covered in this literature review, the ES and RR programs do not yet appear to meet established SPR criteria for designation as efficacious prevention programs due to the limited amount of empirical support for these programs to date. Thus, although initial ES and RR program evaluations have yielded promising findings, the efficacy status of both eclectic programs remains unclear at the present time (Flay et al., 2005).

Programs targeting both children and youth. The first identified eclectic program evaluation involved a school-based preventive intervention for students aged 12 to 15 years in two secondary schools in a community on the west coast of Sweden (Haraldsson et al., 2008). Students in the intervention school received a health promotion program consisting of massage and mental training (i.e., progressive muscle relaxation and autogenic training) over the course of the 2003-2004 academic year, and participants in the nonintervention school served as the control group (Haraldsson et al., 2008). All participants were assessed at the start and at the end of the academic year with a tailored questionnaire that measured students' stress-related experiences. The program results

showed that the combination of massage and relaxation training was successful in general in maintaining the students' stress-related well-being (Haraldsson et al., 2008).

The other identified study evaluated the ES program, which, as discussed earlier, was tested previously with a sample of Israeli youth who had been exposed to war and/or terrorism. In the second study, researchers evaluated the efficacy of the program for reducing stress-related symptomatology among child and adolescent survivors of the 2004 Sri Lankan tsunami (Berger & Gelkopf, 2009). In their controlled quasi-experimental program evaluation, Berger and Gelkopf assigned participants to either the ES program or the waitlist control condition (a Buddhist religious class). The intervention groups received twelve 90-minute sessions of an ES program consisting of psychoeducation, CBT skill training, meditative and bio-energetic exercises, art therapy, and narrative exercises designed to help facilitate the processing of traumatic experiences (Berger & Gelkopf, 2009). The students were assessed 1 week before and 3 months after the intervention with a tailored questionnaire that measured the following outcome variables: (a) objective and subjective exposure to the tsunami, (b) exposure to other traumatic life events, (c) PTSD symptoms, (d) subjective functional impairment, (e) somatic complaints, and (f) depression. The results showed that the ES program was effective in reducing trauma-related symptoms in children and youth (Berger & Gelkopf, 2009).

Summary. The available literature on eclectic stress prevention interventions for children and adolescents indicates that such programs have not yet undergone a sufficient level of testing to establish their public health value in school-based stress prevention

efforts. Nevertheless, current evidence suggests that the ES program in particular holds promise for reducing trauma-related distress in child and adolescent student populations.

Discussion. While the eclectic program evaluations covered in this review provide preliminary evidence that multicomponent stress prevention programs are promising interventions for use with children and adolescents in educational settings, the available evidence does not indicate the extent to which such programming is more or less effective with students than single-component interventions. This additional information appears warranted in light of research that suggests that multicomponent preventive interventions can be as effective as single component programs for other common childhood problems such as alcohol misuse, conduct disorders, and obesity (De Bourdeaudhuij et al., 2011; Foxcroft & Tsertsvadze, 2011; Kumpfer & Alvarado, 2003; Waters et al., 2005). Thus, comparative outcome data on single and multicomponent stress prevention interventions may be useful for advancing the adoption of specific types of programming by school systems with an interest in stress prevention.

Psychoeducational Programs

According to a recent task force report on EBPs for children and adolescents issued by the American Psychological Association, the focus of many prevention-oriented programs for young people has expanded to include a greater emphasis on resiliency enhancement and socioemotional development (American Psychological Association, Task Force on Evidence-Based Practice for Children and Adolescents, 2008). This broadening of focus on the development of socioemotional competencies in children and youth is exemplified by the growth of interest among researchers and

educators in Social and Emotional Learning (SEL) programs for students (Elbertson et al., 2010).

It is important to note that although the SEL program model includes a stress management component, stress prevention is not the sole focus of this psychoeducational training program. Instead, the SEL model features five interrelated skill-based competency areas for promoting the socioemotional development of children and youth: (a) self-awareness, (b) self-management, (c) social awareness, (d) relationship skills, and (e) responsible decision making (Devaney, O'Brien, Keister, Resnik, & Weissberg, 2006; Elbertson et al., 2010; Merrell, 2010). In addition, an important tenet of the SEL model is that socially and emotionally competent children and youth tend to demonstrate greater resiliency during times of stress than young people who lack such skills (Greenberg et al., 2003).

Psychoeducational program evaluations. While SEL programs have been extensively studied over the past 3 decades, the research literature indicates that the majority of universal school-based SEL programs to date have been evaluated in relation to general mental health promotion, positive youth development, and problems other than stress (Zins & Elias, 2006). Nevertheless, the available evidence from recent scientific reviews indicates that school-based SEL programs are effective in reducing stress and promoting resiliency in children and adolescents (Durlak et al., 2011; Payton et al., 2008).

Discussion. Despite the fact that the SEL model does not place a primary emphasis on stress prevention per se, it has earned widespread acceptance among

educators on the basis of its established value in building students' general socioemotional self-regulatory capacities, which are requisite skills for educational achievement and healthy adjustment across development (Durlak et al., 2011; Eisenberg, Spinrad, & Eggum, 2010; Eisenberg & Sulik, 2012; Jennings & Greenberg, 2009; Payton et al., 2008; Zins, Weissberg, Wang, & Walberg, 2004). Thus, SEL is among the important prevention-oriented training models discussed in the literature that should be of interest to researchers, educators, and clinicians who seek a better understanding of the current landscape of available school-based programs for reducing stress in general student populations.

Significance of Findings

At the present time, the stress prevention intervention literature provides confirmation of the existence of evidence-based programs for use in schools, and also furnishes insights into the empirical status of various stress prevention programming models. In addition, it provides a clear and compelling message that prevention researchers are mindful of the need for school-based programs to help students cope with stress (Barker, 1987; Foret et al., 2012; Forman, 1993; Henderson & Kelbey, 1992; Kraag et al., 2006; Parrott III, 1990; Mendelson et al., 2010; White, 2012). However, the intervention research literature does not provide data on the prevalence and characteristics of stress prevention programming practices with children and adolescents in real-world educational settings. Such practice-related knowledge gaps provided justification for the first two research questions that guided the current study (see Table 1).

School Intervention Process Evaluation Research

While the evidence base supporting the efficacy of various school-based prevention programs has grown in recent decades (Center for School Mental Health Assistance, 2002b; Greenberg et al., 2005), the professional literature indicates that prevention programming developers in general have devoted little attention to the evaluation of process factors that contribute to the success of innovative programs when implemented in real-world settings (Dane & Schneider, 1998; Domitrovich & Greenberg, 2000; Kraag et al., 2007; O'Connell et al., 2009). This neglected area of study has become a topic of concern in the prevention science field in light of findings that indicate that empirically validated programs often do not perform well in real-world settings in the absence of high quality implementation by program users (O'Connell et al., 2009).

The growing recognition that how well a program is put into practice affects its real-world effectiveness has given rise to scholarly interest in school-based preventive intervention process research (Carroll et al., 2007; Durlak, 1998; Dusenbury, Brannigan, Falco, & Hansen, 2003; Ferrari & Durlak, 1998; Greenberg et al., 2005). In this expanding area of study, prevention scientists have sought a better understanding of the factors and processes that affect programming implementation fidelity and related outcomes with students in educational settings (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Greenberg et al., 2005).

School Preventive Intervention Process Evaluations

The empirical literature indicates that recent efforts to build a scientific knowledge base pertaining to factors and processes that influence the effective delivery

of tested programs in naturalistic school-based settings has centered mainly on the areas of programming adoption, implementation, and sustainability (Greenberg et al., 2005; O'Connell et al., 2009). In the group of process studies selected for this review, some researchers have focused on programming adoption factors and/or outcomes, and others have investigated factors and processes that affect program implementation integrity. Thus, in the interest of promoting greater clarity in this discussion, the intervention process evaluation research covered in this review has been organized under the subsection headings of programming adoption studies and implementation research, respectively.

Programming adoption studies. In a recent pilot study, Garcia, Pintor and Lindgren (2010) examined the feasibility and acceptability of Project Wings, a 14-session CST intervention comprised of sharing circles, relaxation exercises, and life skills lessons, with two groups of Spanish-speaking Latina adolescents from two high schools in metropolitan areas of Minnesota. In this program adoption study, ten Latina students in one school received fourteen 2-hour sessions of the intervention during the fall school semester, and the remaining eleven students in the other participating school received the same level of intervention during the following spring semester (Garcia et al., 2010). This pilot study was not designed to assess the effectiveness of Project Wings, so no control condition was reportedly included in the project. The program's three main clinical objectives were to (a) improve the ability of participants to identify the psychological, emotional, and physical manifestations of stress, (b) help students develop practical skills for coping with everyday stressors, and (c) increase participants'

understanding of the influence of cognitive processes on the human stress response (Garcia et al., 2010). All participants were asked to complete baseline and postintervention surveys and qualitative data were gathered from students using a weekly notecard feedback procedure and postintervention focus group strategy. The results of the program evaluation indicated that the Latina students found the Project Wings program to be feasible, acceptable, and worthwhile (Garcia et al., 2010).

In other related research, Wall (2005) conducted a preliminary investigation of the feasibility and acceptability of a combined Tai chi and MBSR program for stress reduction in a Boston public middle school. In this 5-week nonexperimental program adoption study, the intervention was introduced to a group of sixth-grade girls and to a group of eighth-grade boys (Wall, 2005). The participants were given the opportunity to observe and practice each of the blended TC/MBSR techniques being demonstrated to them by the researcher, and verbal student reports indicated that participants experienced decreases in various domains of stress over the 5-week study period and found the program to be enjoyable (Wall, 2005).

The other identified study looked at factors associated with the adoption of empirically-supported substance use prevention curricula (EBC) by school systems in the United States (Rohrbach et al., 2005). In this nationwide survey, school district representatives who were deemed most knowledgeable about substance abuse prevention programs operating in their districts were identified and asked to complete a written questionnaire (Rohrbach et al., 2005). The 70-item instrument was designed to answer questions pertaining to which individuals and groups have the most input into decisions

about substance use prevention curricula, what sources of information districts use to guide program adoption decisions, and which factors (i.e., demographic, curriculum, and organizational) have the strongest impact on a district's decision to adopt an EBC (Rohrbach et al., 2005).

The survey revealed that approximately 48% of the sampled school districts used at least one EBC (Rohrbach et al., 2005). In addition, five factors were found to predict district-level decisions to adopt evidence-based substance abuse prevention curricula: (a) acceptance of input from a state-level substance use prevention group, (b) the use of authoritative information disseminated by the National Institute on Drug Abuse or Center for Substance Abuse Prevention, (c) the use of local program needs assessment data, (d) the willingness to use available curriculum effectiveness data, and (e) allocating a greater proportion of a school program coordinator's time to substance use prevention activities (Rohrbach et al., 2005).

Implementation research. In a recent dissertation study on the Zippy's Friends program for school-age children, Clarke (2011) investigated whether the program could be successfully adapted and implemented in disadvantaged primary schools in Ireland. The program was piloted in 30 designated disadvantaged schools (DEIS) in the West of Ireland over the course of 2 academic years, and the child participants received a total of 24 lessons during that time period (Clarke, 2011). Both process and outcome-related data were collected from teachers and students, and the results indicated that the program was implemented with a high degree of fidelity and required little or no adaptation to

implement effectively. Clarke further reported that Zippy's Friends was well received by students and was found to have positive overall effects on the children's emotional literacy, coping skills, and emotional and behavioral functioning.

Similar results were obtained in a process evaluation study involving the Learn Young, Learn Fair program for fifth- and sixth-grade students (Kraag et al., 2007). In this pilot study, researchers assessed the quality of program implementation by teachers in regular elementary schools in the Limburg province of the Netherlands. Students in the participating schools were randomly assigned to either the experimental or control group, and process evaluation data were collected from the experimental group at each school (Kraag et al., 2007). The process variables of empirical interest included program dosage (implementation completeness) and program fidelity (the degree to which all program components were implemented) (Kraag et al., 2007). The evaluation strategy also included teacher and pupil feedback on the program's acceptability, as this information was deemed necessary for gauging the likelihood of future program adoption and implementation in real-world educational settings. The results of the study indicated strong student and teacher support for the program as well as a high level of program implementation completeness and fidelity (Kraag et al., 2007).

In other research, Gottfredson and Gottfredson (2002) investigated the quality of prevention programming implementation practices in naturalistic school-based settings using a nationally representative sample of schools drawn from a commercial mailing list vendor. School principals served as study informants, and were asked to report on prevention and intervention activities in place in their schools to prevent or reduce drug

use, other behavior problems, and to promote a safe and orderly school climate (Gottfredson & Gottfredson, 2002). The survey instrument used in the study was constructed to assess various generic aspects of prevention program quantity and implementation quality as described in the intervention research literature (Gottfredson & Gottfredson, 2002).

The survey indicated that prevention programming implementation quality was low among the sampled districts in comparison to implementation protocols employed in published efficacy trials (Gottfredson & Gottfredson, 2002). In addition, six process factors were found to predict higher quality programming implementation: (a) integration of prevention activities into normal school operations, (b) local planning and involvement in decision-making about programs, (c) use of school staff as program implementers, (d) increased organizational support, (e) improved training and supervision, and (f) standardization of program materials and methods (Gottfredson & Gottfredson, 2002).

Another related study examined implementation issues in 34 school-based prevention programs for children and adolescents (Domitrovich & Greenberg, 2000). The interventions under consideration in this program review were assessed on the basis of several recognized dimensions of program integrity outlined in the literature: (a) fidelity and adherence, (b) dosage, (c) participant responsiveness, and (d) program differentiation. Using these indicators of programming implementation integrity in their analysis, Domitrovich and Greenberg produced several descriptive findings of empirical interest: (a) 59% of programs monitored implementation fidelity and adherence, (b) 33% included information on implementation dosage, (c) 12% assessed participant

responsiveness, and (d) 6% tracked program differentiation. They further reported that only 32% of the sampled programs utilized implementation information to assess whether implementation integrity was related to programming outcomes.

In other research, Han and Weiss (2005) examined the research literature pertaining to teacher-facilitated school-based mental health programs for children and youth in an effort to identify factors that contribute to effective program implementation in the classroom. In their literature review, Han and Weiss identified four factors that appear to be essential elements of a potentially sustainable teacher-implemented mental health program: (a) the program's acceptability to teachers, (b) teachers' attributions about the program's effectiveness with students, (c) the feasibility of sustaining the program's implementation in the classroom, and (d) the program's flexibility and adaptability in the school environment.

The other identified study entailed a comprehensive review of the fidelity of implementation research literature spanning a 25-year period (Dusenbury et al., 2003). The literature search strategy employed in the study involved an examination of program implementation integrity studies conducted in the fields of mental health, prevention, personal and social competence promotion, and substance abuse treatment and prevention (Dusenbury et al., 2003). The results indicated that while researchers have yet to establish the critical elements of effective school-based programming implementation, there is evidence that teacher, program, and organizational characteristics affect the quality of program delivery in educational settings (Dusenbury et al., 2003).

Discussion. Although implementation research to date has been fruitful with respect to pinpointing factors that can affect the quality, sustainability, and effectiveness of prevention programming activities in naturalistic settings, the literature indicates that the science of how to effectively take evidence-based prevention programs to scale in the school environment is still in its infancy (Fixsen et al., 2005; Greenberg et al., 2005; O'Connell et al., 2009). Nevertheless, there is growing awareness among prevention scientists that the study of implementation is an essential component of program development and effective implementation practices in real-world settings (Greenberg et al., 2005; O'Connell et al., 2009; Sanchez et al., 2007).

Significance of Findings

At the present time, the intervention process literature pertaining to school-based prevention programming offers useful information that can inform the efforts of school systems to take evidence-based prevention programs to scale in real-world educational settings. However, at the same time that the literature provides insights into effective programming implementation practices, it does not provide information on factors associated with stress prevention programming adoption/implementation practices with students in the school environment. This important information gap provided justification for the third research question that helped guide the current study on school district stress prevention practices in the state of Tennessee (see Table 1).

School Health Services Research

While previous sections of this literature review have highlighted the development of school-based stress prevention programs and the work of prevention

scientists to advance the science of effective program implementation, respectively, the third section of this review covers research focused on the prevalence and characteristics of school-based mental health services for children and adolescents across the nation. As reported in the literature, this line of school health services research has not been conducted for the purpose of evaluating school-based programming implementation processes or effectiveness with students (Kolbe et al., 1995; Teich et al., 2007). Instead, researchers have sought descriptive information on national trends in school-based mental health programming and services that can be used to inform the work of policymakers, educators, and practitioners who seek a better understanding of the range of programs and services provided to students across the nation (Brener et al., 2001; Lever et al., 2010; Teich et al., 2007).

National School Health Services Research

In the search for relevant literature, a small number of national studies were identified that had a primary or secondary focus on mental health programs and services for children and youth. Some of the selected studies have examined the prevalence and characteristics of school health programs and services for students across the nation, and others have investigated the relationship between school characteristics and health services availability. Thus, the selected studies in this section of the review have been organized on the basis of their respective research emphases.

Studies on programming prevalence and characteristics. In 1994, the Centers for Disease Control and Prevention (CDC) conducted the first in a series of agency-sponsored studies on the status and core characteristics of school health programs across

the nation using a nationally representative sample of schools, districts, and states (Kann et al., 1995; Kutash et al., 2006). In this CDC-sponsored School Health Policies and Programs Study (SHPPS), researchers examined the strides being made by states, districts, and schools in adopting core elements of the CDC's revised Coordinated School Health (CSH) program model. The CSH model features eight interrelated components designed to improve the health of students, faculty, and school staff: (a) health education, (b) health services, (c) physical education, (d) mental health and social services, (e) nutrition services, (f) family and community support, (g) faculty and staff health promotion, and (h) a healthy and safe school environment (Allensworth & Kolbe, 1987; CDC, 2013; Marx, Wooley, & Northrop, 1998). In an effort to meet specific CSH-related information objectives, the SHPPS 1994 was designed to answer four research questions:

- What is the current status of health education, physical education, health services, food service, and health policies pertaining to violence, alcohol, tobacco and other drug use at the state, district, school, and classroom levels?
- Who is administratively responsible for the delivery of each CSH program component?
- What is the nature of the relationship between state and district policies and current CSH programs?
- What factors facilitate and hinder the delivery of quality CSH programs (Kann et al., 1995).

The initial SHPPS was carried out between March and June of 1994, and a cross-sectional survey method was used to collect data on CSH policies and programs at the state, district, school, and classroom levels (Kann et al., 1995). One general finding of interest in the CDC study described stress-related health education trends, and indicated that 82% of health education instructors surveyed in 1994 provided some level of instruction to students on ways to manage stress (CDC, n.d.b). This noteworthy finding raises more questions than it answers regarding the nature of stress-related educational activities with students across the nation in the 1990s, as stress education was not included among the prevention-oriented health education initiatives reported by states, districts, and schools in the SHPPS 1994 (Kolbe et al., 1995).

While the health education information provided in the SHPPS 1994 further indicates that a large percentage of health instructors in years past have had an awareness of the importance of stress as an education topic, no descriptive information was gathered by SHPPS researchers pertaining to the characteristics of stress-related health education in U.S. school districts in the 1990s (Kolbe et al., 1995). In the absence of such information, there is no way of determining the types of stress management training students have previously received, or whether such reported health education instruction has been provided within the context of curriculum-based programs designed for stress prevention. In addition, the SHPPS 1994 results do not provide information on the distribution of stress health education programs by grade level within U.S. school districts, and they do not indicate whether stress-related health education has been

provided previously to all children and adolescents or to at-risk or clinical student populations only (Kolbe et al., 1995).

In addition to these health education information gaps, the SHPPS 1994 findings did not include school health services data related to stress prevention activities. More specifically, CDC researchers in the SHPPS 1994 produced aggregated prevalence data on specific school health services such as counseling, drug and alcohol treatment, and universal activities pertaining to alcohol, tobacco, and violence/suicide prevention, but they did not gather descriptive information on school-based/linked stress prevention programs and services for students (CDC, n.d.a, Kolbe et al., 1995).

In the subsequent follow-up CDC survey conducted in 2000, efforts were again made by researchers to assess CSH policy and programming trends at the state, district, school, and classroom levels, but a greater research focus was placed in the SHPPS 2000 on policies and programs related to school-based mental health and social services. According to Brener et al. (2001), this expanded research agenda in the SHPPS 2000 represented the first systematic attempt to gather information on the range of school-based mental health and social services provided to students across the nation. In this groundbreaking study, researchers gathered six types of descriptive data: (a) policies pertaining to mental health and social services, (b) treatment and preventive services offered and related methods used in the provision of these services, (c) required credentials for mental health and social services providers, (d) staff development policies and in-service training practices, (e) coordination and evaluation of school mental health

and social services, and (f) information on facilities and service delivery sites (Brener et al., 2001).

SHPPS 2000 findings of relevance to this discussion indicate that 46% of districts and 79% of sampled schools nationwide have provided some level of stress management support to students in recent years. While these findings highlight the recent progress made by school systems in meeting the stress-related support needs of children and youth, they do not indicate the extent to which public school systems in the United States have placed a primary emphasis on prevention rather than treatment in the delivery of stress-related mental health services. In addition, the SHPPS 2000 does not provide information on the types of mental health providers who typically deliver stress management services or the student populations who generally receive such services in U.S. schools (Brener et al., 2001).

Other related findings of interest in the SHPPS 2000 pertain to stress-related school health services. More specifically, 10% of states and 39% of school districts reported providing stress management services in schools, and 41% of surveyed schools indicated that they provided such health services to students (Brener et al., 2001). Although these findings provide further confirmation of the recent progress made by states, districts, and schools in addressing the stress-related support needs of children and adolescents, they do not indicate the extent to which nationwide stress-related school health policies and practices constitute stress prevention initiatives. Similarly, the SHPPS 2000 does not indicate whether nationwide stress-related school health policies and practices have generally been directed toward all students or at-risk/clinical

populations only (Brener et al., 2001). As with the SHPPS 1994, these information gaps in the SHPPS 2000 reflect its methodological shortcomings, as the CDC-sponsored survey was not specifically designed to measure school-based stress prevention practices (Smith et al., 2001).

In another recent CDC survey, the SHPPS 2006, researchers sought descriptive data on health policies and programs at the state, district, school, and classroom levels using computer-assisted telephone interviews and mail questionnaires with state education officials and a representative sample of school districts (Kann et al., 2007). As with SHPPS 2000, the SHPPS 2006 was designed to answer the following research questions:

- What are the characteristics of each CSH component at the state, district, school, and classroom levels?
- Who is administratively responsible for each CSH program component?
- What types of collaboration occur among school staff involved with each CSH component and community-based agencies and organizations?
- What changes have taken place in CSH policies and practices over time (Kann et al., 2007)?

In the SHPPS 2006, several relevant survey results were generated pertaining to stress-related health education and clinical services for children and adolescents. More specifically, the SHPPS 2006 indicated that 57% of elementary schools, 75% of middle schools, and 88% of U.S. high schools have recently provided didactic instruction to students on healthy and maladaptive ways of dealing with stress (Kann, Telljohann, &

Wooley, 2007). Researchers also found that approximately 28% of schools and districts have recently coordinated the provision of stress management services to students at off-campus health care facilities, and 42% of schools have provided such health services to children and adolescents on school grounds (Brener et al., 2007; Brener, Wheeler, Wolfe, Vernon-Smiley, & Caldart-Olson, 2007). In addition, the SHPPS 2006 revealed that 4% of states and 28% of school districts nationwide have adopted a school health services policy mandating the provision of stress management services to students (Brener et al., 2007). While these data provide additional insights into the progress being made by U.S. schools in meeting the stress-related health education and service needs of students, the SHPPS 2006 findings do not indicate the extent to which such trends constitute prevention-oriented initiatives with children and youth.

In the most recent SHPPS, which took place in 2012, researchers examined CSH policies and practices at the state and district levels using a nationally representative sample of public school systems (CDC, 2013). The SHPPS 2012 findings of interest indicate that 58% of U.S. states and 61% of public school districts nationwide provide crisis intervention services to students (CDC, 2013). In addition, researchers found that 53% of states and 42% of districts provide stress management services to children and youth (CDC, 2013). It should be noted that although these findings are informative, they do not indicate the extent to which current mental health service trends related to stress constitute prevention-oriented activities with students across the nation. They also do not reveal whether services are provided to all students or clinical student populations only (CDC, 2013). Thus, as with the previous CDC surveys, the SHPPS 2012 does not

provide sufficient data to support logical inferences regarding stress prevention practice trends in Tennessee public school systems.

CMHS study. In an effort to meet the demand for information on standard mental health services for students in U.S. public schools, the Substance Abuse and Mental Health Services Administration's Center for Mental Health Services (CMHS) launched the first-ever national survey focused exclusively on school mental health services in 2002-2003 (Teich et al., 2007). CMHS researchers used postal questionnaires to collect data on school mental health practices from a nationally representative sample of schools and districts (Teich et al., 2007). The survey instruments were designed to answer the following research questions:

- What student mental health problems do schools most frequently encounter and what are the available types of mental health services to address those problems?
- What are the administrative arrangements for the coordination and delivery of mental health services in schools?
- What are the types, characteristics, and qualifications of mental health service providers in schools?
- What are the issues related to funding, budgeting and resource allocation, and use of mental health services data (Foster et al., 2005)?

While the main intent of the CMHS study was to gather descriptive data on psychiatric treatment services for students with common mental health problems, survey respondents were also asked to report on the types of prevention and early intervention programs offered to students (Foster et al., 2005; Teich et al., 2007). However, it should

be noted that the study was not designed or intended to collect information on school/classroom-wide prevention activities targeting general student populations (Teich et al., 2007).

According to Foster et al. (2005), their results indicated that a majority of the nation's schools have recently provided assessment, behavioral management consultation, case management, counseling, and referral services to students (Foster et al., 2005). In addition, 87% of elementary schools, 86% of middle schools, and 82% of high schools reported providing crisis-oriented mental health services. However, the CMHS findings do not indicate the extent to which such crisis services constitute stress prevention activities with children and adolescents (Foster et al., 2005; Teich et al., 2007). It is further noteworthy that the CMHS results do not include information on prevention programming and service trends with students related to everyday stress (Foster et al., 2005; Teich et al., 2007).

CSMH study. Another recent study on school mental health services was conducted by the Center for School Mental Health (CSMH) at the University of Maryland's School of Medicine (Lever et al., 2010). The primary objective of the study was to describe expanded school mental health (ESMH) programs across the nation, which are implemented in schools by community-based providers and designed to augment primary mental health services provided to students by school-employed mental health professionals (Lever et al., 2010). The sample for the project was drawn from a nationwide directory of ESMH programs derived from the listserv databases of both the CSMH and the Center for Mental Health in Schools at UCLA, and the databases were

used to disseminate the survey electronically via targeted e-mail announcements to ESMH program stakeholders (Lever et al., 2010).

According to Lever et al., the Survey Monkey platform was used for their Web-based questionnaire, and the survey collected the following types of ESMH-related data: (a) student populations and communities served, (b) the demographics of students served, (c) background information on clinical staff, (d) types of services offered, (e) partnerships, (f) funding mechanisms, and (g) types of evidence-based methods used. The survey results for services offered and evidence-based practices indicated that 22 types of mental health treatment services have been delivered to students within ESMH programs across the nation, and 33 types of interventions have been used in school settings (Lever et al., 2010). It is further noteworthy that no information was gathered by CSMH researchers pertaining to stress prevention activities in ESMH programs in the United States.

Summary. At this point in the literature review it is important to make reference to recent findings on crisis services for children and adolescents reported in the SHPPSs and in the CMHS survey, as such findings are relevant to the present discussion. More specifically, while the results of the SHPPSs and CMHS study indicate that the majority of schools nationwide have provided crisis-related services to students in recent years, these findings do not indicate the extent to which recent crisis service trends in U.S. schools constitute prevention-oriented work with children and youth. Such clinical information is warranted, as school-based crisis services are known to lie on a continuum between prevention and treatment-oriented activities (Brock, Lazarus, & Jimerson, 2002;

Jimerson et al., 2005). Thus, from a clinical perspective, it is important to have accurate information regarding the extent to which the nation's schools are providing crisis prevention services and postevent treatment services, as both service models have their place in helping schoolchildren develop requisite skills for meeting the adaptive challenges that occur in the aftermath of exposure to major adverse life events (Center for School Mental Health Assistance, 2002a).

Studies on School factors and health service prevalence. In the first identified study, Slade (2003) used data from the 1994-1995 National Longitudinal Study of Adolescent Health (Add Health study) in his investigation of the relationship between school demographic characteristics and student health service availability in middle and high schools across the nation. The results of logistic regression analyses revealed that several characteristics were related to the availability of on-site mental health counseling for students: (a) minority race, (b) school size, (c) urbanicity, (d) geographic region, and (e) Medicaid enrollment. Slade also found significant regional variation in the availability of on-site mental health services for students, and the findings indicated that larger schools were more likely to provide mental health counseling, physical examinations, and substance abuse counseling than smaller schools. Slade further reported that suburban schools were more likely to provide on-site physical examinations and substance abuse counseling to students than urban and rural schools, and schools with higher percentages of students without health insurance were significantly less likely to provide physical examinations than schools with smaller percentages of uninsured students.

In other related research, scientists analyzed data from the SHPPS 2000 in examining the relationship between school demographic characteristics and student health policies and programs at the national level (Brener et al., 2003). In this CDC-sponsored study, regression analyses revealed that the following school characteristics predicted differences among schools related to student health policies and programs: (a) school type, (b) urbanicity, (c) student enrollment, (d) discretionary dollars spent per pupil, (e) percentage of White students, and (f) percentage of college-bound students (Brener et al., 2003). These results were later replicated by Balaji et al. (2010), who used data from the SHPPS 2006 in examining variation in school health policies and programs by school demographic factors.

Tennessee School Health Services

The state-level programming information presented in this discussion is derived from grey literature sources and state government websites. These additional information sources were deemed useful for identifying specific school-based mental health programming initiatives for young Tennesseans that have not been reported in the school health services literature.

Stress-related programs and services. In 2008, the National Center for Child Poverty at Columbia University released an influential report on children's mental health policy that included information on Project BASIC, a publicly-funded school mental health liaison program that specializes in the coordination of primary mental health services for at-risk schoolchildren in resource-scare rural areas of Tennessee (Cooper et al., 2008; Tennessee Department of Mental Health, Division of Mental Health Services,

Office of Children & Youth, n.d.). The program fosters partnerships between families, schools, and community-based mental health service providers on behalf of at-risk children and those with serious emotional problems, and students are provided access to a range of services designed to promote their psychosocial development and adaptive competence (Tennessee Department of Mental Health, Division of Mental Health Services, Office of Children & Youth, n.d.). Project BASIC operates in 39 Tennessee counties and services are available in targeted rural schools that have entered into partnerships with mental health agencies involved in the project (Cooper et al., 2008; Tennessee Department of Mental Health, Division of Mental Health Services, Office of Children & Youth, n.d.).

Another identified programming initiative is Tennessee Schools PREPARE (TSP), which is designed to help school districts across the state improve the response and recovery components of their emergency management plans (Vanderbilt Community Mental Health Center & the Tennessee Department of Education, 2010). As a joint project of the Vanderbilt Community Mental Health Center and the Tennessee Department of Education, the TSP program disseminates authoritative information to school districts on ways of preparing students, educators, school staff, and parents to meet the adaptive challenges that inevitably occur in the aftermath of a major school crisis. Program participation is voluntary and no information is provided on the program developers' website pertaining to how widely the program is dispersed in school districts across the state (Vanderbilt Community Mental Health Center & the Tennessee Department of Education, 2010).

General school-based programs and services. In recent years, Tennessee state officials have stepped-up efforts to address the mental health service needs of young Tennesseans through the adoption of a system-of-care (SOC) approach that includes the expansion of school-based mental health services for students (Council on Children's Mental Health, 2009). More specifically, in 2006 the Tennessee General Assembly passed legislation (SJR799) that directed its Select Joint Committee on Children and Youth to assess the state's mental health system for children and develop recommendations for its improvement (Tennessee General Assembly, 2006). Among the core issues identified during the SJR799 study process was the negative developmental impact that unmanaged stress is having on many young Tennesseans. The Committee's subsequent final report to the Tennessee legislature (as required by SJR799) included the recommendation that a council on children's mental health be created for the purpose of improving the state's system of mental health care for children (Tennessee General Assembly, Select Joint Committee on Children and Youth, 2008).

On the basis this recommendation, the Tennessee General Assembly passed legislation (Public Chapter 1062) that established the Council on Children's Mental Health (CCMH), which was given the task of developing a plan for transforming the statewide system of mental health care to make it more responsive to the growing mental health needs of children, youth, and families (Betts & O'Neal, 2010; Council on Children's Mental Health, 2009). Since 2008, the work of the CCMH has centered on the development of an SOC framework for the delivery of mental health services to children

and youth that emphasizes interagency cooperation and teamwork (Council on Children's Mental Health, 2009).

Recent efforts have also been made in the Volunteer State to strengthen the available infrastructure in schools to support an SOC approach to the delivery of mental health services to students (Betts & O'Neal, 2010). Using grant money provided by the U.S. Department of Education, the Tennessee Office of Coordinated School Health has worked to integrate schools and mental health systems statewide by assisting LEAs in establishing partnerships with community mental health providers to facilitate the provision of mental health services to young Tennesseans (Betts & O'Neal, 2010). At the present time however, it is not known whether this current school-based mental health initiative includes the provision of stress prevention programming and services to students (Tennessee State Board of Education, 2009).

Significance of Findings

The national school health services studies covered in this review offer useful information on the range of traditional mental health services provided to children and adolescents in real-world educational settings—including stress-related educational and clinical services. In addition, the available grey literature on school-based mental health services in the state of Tennessee provides insights into some of the stress-related services that have been delivered to students in recent years in the Volunteer State. However, the available literature does not provide information on the prevalence and characteristics of real-world stress prevention practices in Tennessee public school districts, and it also does not include studies on the relationship between school district

factors and stress prevention practice trends with students. These important information gaps provided justification for the three research questions that guided the current study (see Table 1).

Conclusion

In this literature review, numerous studies were presented that help reveal what is currently known about school-based stress prevention practices with children and adolescents in the United States. Overall, the current body of findings indicates that evidence-based stress prevention programs have been developed for use with children and adolescents in educational settings. However, the empirical literature does not include a focus on real-world stress prevention practice trends in public school districts across the nation or in the state of Tennessee in particular. More specifically, while studies indicate that many states, districts, and schools across the country provide some level of stress-related health instruction and/or health services to children and adolescents, national studies to date do not indicate the extent to which such health education and service trends constitute prevention practices rather than treatment activities with students. Consequently, the current literature does not provide an empirical foundation from which valid inferences can be drawn regarding the prevalence and characteristics of school-based stress prevention practices in the Volunteer State.

The fact that questions pertaining to the prevalence and characteristics of school stress prevention practices in the state of Tennessee have not been addressed by previous research is not surprising, as studies to date have not been specifically designed to answer

such research questions. For example, the questionnaires used in the SHPPS 2006 do not contain even a single item that specifically inquires about school stress prevention programs and services for students (CDC, 2006a, 2006b, 2006c). This important shortcoming of the SHHPS 2006 is indicative of the methodological limitations of research to date on school mental health services for children and adolescents.

With that said, it is important to point out that the main shortcoming of previous research does not appear to be the general survey research approach used in the collection of data on school-based health services. Rather, the problem centers on the types of services that have been investigated. Thus, with this important methodological issue in mind, Chapter 3 provides an overview of the survey research methodology used in the current study on school district stress prevention practices in the Volunteer State.

Chapter 3: Research Methodology

Introduction

The purpose of this quantitative descriptive study was to investigate stress prevention practices in Tennessee public school districts, in order to provide needed empirical insights into stress-related programs and services for children and adolescents across the state. Descriptive information was generated in the current study pertaining to the prevalence and characteristics of stress prevention programs and services for students, and the relationship between school district characteristics and programming and services prevalence. These data were intended to foster positive social change in the lives of young Tennesseans by informing the work of educators and school health professionals who seek to adopt or improve prevention programs and services that promote the adaptive self-regulatory competence of students.

At this point in the discussion it is important to reiterate that the current study is best classified under the rubric of school health services research (Teich et al., 2007; U.S. Department of Health & Human Services, Agency for Healthcare Research and Quality, 2009; Werthamer-Larsson, 1994), which is concerned principally with the investigation of the prevalence and characteristics of student health services. As such, it is distinguishable from intervention process evaluation research, in which investigators are primarily interested in factors associated with a school system's decision to adopt a program as well as the extent to which an adopted program is implemented the way its developers intended it to be used (program fidelity) in an educational environment (Dane

& Schneider, 1998; Greenberg et al., 2005; Rohrbach et al., 2005). However, while the primary aim of this study was to establish whether stress prevention programs and services are currently provided to students in Tennessee public school districts, it also sets the stage for future studies directed toward the evaluation of implementation quality and outcomes related to specific school-based stress prevention programs and services reported by districts in the survey.

Preview of Chapter

Chapter 3 begins with an overview of the survey research design used in the current study, and includes a rationale for its use in achieving the scientific objectives of this research project. Information is also provided on the study's major concepts and the key research questions and variables of research interest that are derived from them. Additional discussion focuses on methodological issues related to the study population and the procedures used for participant recruitment, survey participation, and data collection and analysis. This methodological overview further includes a description of the survey instrument used in the current study for answering the research questions that guided this survey research project. In addition, Chapter 3 addresses measurement issues related to instrumentation validity, and also covers important ethical issues and procedures associated with the current study. Finally, Chapter 3 concludes with a recap of the merits of this study and a brief prelude to Chapter 4.

Research Design and Rationale

As previously mentioned, the current study was intended to be a descriptive quantitative research project that furnishes needed baseline data on stress prevention

practices in public school systems in the state of Tennessee. In thinking about an appropriate research design for this project, the main consideration was selecting a quantitative methodological approach that achieves the information gathering objectives of this descriptive study in a manner that is efficient and cost effective. With this methodological consideration in mind, I determined that the cross-sectional survey research approach would be best suited for answering the research questions of empirical interest in this study.

The main rationale for selecting this nonexperimental research design was its compatibility with the information objectives of this descriptive study, as the survey method is a widely recognized descriptive research approach that has been used successfully in previous school health services studies of relevance to the current study (Jackson, 2012). More specifically, according to the school health services literature, the cross-sectional survey approach has been the method of choice in investigations to date on school-based mental health services for children and youth (Brener et al., 2001; Brener et al., 2007; Foster et al., 2005; Friedrich, 2010; Kann et al., 1995; Kolbe et al., 1995; Lever et al., 2010; Teich et al., 2007). Thus, on the basis of these findings, the cross-sectional survey approach appeared to be the most logical methodological choice for answering the research questions that guided this study.

Research Questions

According to the school health services literature, researchers to date have not examined questions pertaining to the prevalence and characteristics of school-based stress prevention programs and services for children and adolescents either nationally or in the

state of Tennessee more specifically. Rather, they have sought general descriptive information on the range of mental health services and evidence-based programs available to students with emotional and behavioral problems in school systems across the nation (Lever et al., 2010; Teich et al., 2007). In this effort, researchers have gathered data on school-based services such as psychiatric consultation, medication management, individual and group counseling, and prevention initiatives in the areas of alcohol and drug use, AIDS and STDs, violence, eating disorders, and accident and injury prevention (Brener et al., 2007; Foster et al., 2005; Lever et al., 2010). In addition, while researchers in previous studies have also generated a limited amount of information on national health education and clinical service trends related to stress, these data do not indicate the extent to which such trends constitute school-based stress prevention initiatives with children and adolescents (Brener et al., 2001; Kann et al., 2007; Kolbe et al., 1995; Lever et al., 2010). Consequently, in the absence of such data, no empirical basis exists for drawing inferences regarding the status of stress prevention practices in school districts either nationally or at the state level.

The school health services literature further indicates that researchers to date have not examined factors that influence school-based stress prevention practices with children and adolescents. More specifically, while researchers in prior studies have confirmed that school demographic factors such as school size, K-12 enrollment, geographic location, urbanicity, and race/ethnicity are related to the availability of health education and clinical services for students, they have not examined the relationship between school

characteristics and stress prevention practices in primary and secondary education (Balaji et al., 2010; Brener et al., 2003; Slade, 2003).

In light of current information gaps in the literature pertaining to the prevalence and characteristics of stress prevention activities in U.S. school districts and factors that influence such activities, there are three previously unanswered research questions (see Table 1) that guided this survey research project.

Table 1

Dissertation Topic and Research Questions

Topic	Research questions
Stress prevention practices in Tennessee school districts	(1) How prevalent are stress prevention programming and services for students in Tennessee public school districts?
	(2) What are the general characteristics of stress prevention programs and services for students in public school districts across Tennessee?
	(3) Are school district characteristics associated with the availability of stress prevention programs and services for students in Tennessee?

Study Variables

As discussed in Chapter 1, there are two major concepts associated with this research project from which the research questions and related study variables were derived: (a) school stress prevention practices, and (b) Tennessee school districts. With that said, the first two groups of study variables consisted of the measurable characteristics of the school stress prevention practices construct, which was conceptually

defined in the current study as curriculum-based programs and mental health services carried out in schools for the purpose of reducing stress in nonclinical student populations (Frydenberg et al., 2004; Kraag et al., 2006; O'Connell et al., 2009). The construct's core measurable characteristics (i.e., curriculum-based stress prevention programs and school-based stress prevention services) were operationalized in a manner that yielded two sets of variables on which primary data were gathered using a survey instrument designed for these measurement tasks. A detailed overview of how the survey instrument's item structure was constructed in relation to the operational indicators of the school stress prevention practices construct is provided in the methodology section of this chapter.

The other set of variables comprises the measurable demographic characteristics of the school district construct, which was conceptualized in this study as an LEA in the state of Tennessee that employs teachers and that is administratively responsible for providing educational instruction and support services to children and youth (Strizek et al., 2006). As with the school stress prevention practices construct, the Tennessee school district construct was operationalized in a way that allowed for its accurate measurement using the survey instrument designed for this research purpose. A detailed overview of the school district variables derived from the concept operationalization process is provided in the methodology section of this chapter.

Methodology

Theoretical Framework

As discussed previously in Chapter 1, the theoretical framework for this descriptive study was DIT, which is currently regarded as a useful paradigm for

understanding the process of program adoption in school-based mental health (Atkins et al., 2010; Center for Mental Health in Schools at UCLA, n.d.; Dearing, 2008; Rogers, 2003; The Evidence-Based Intervention Work Group, 2005). DIT has been applied to the analysis of findings in an effort to provide a theoretical interpretion of the survey results, which has been lacking in previous school health services studies of relevance to this research project (Brener et al., 2001; Brener et al., 2001; Brener et al., 2007; Foster et al., 2005; Kann et al., 2007; Kolbe et al., 1995; Lever et al., 2010). As previously noted, such informed theoretical speculation may lead to tentative hypotheses regarding process factors involved in current stress prevention practice trends in Tennessee public school systems that can be tested in future studies.

Population and Sampling Plan

With the understanding that the main purpose of this study was to gather primary descriptive data on stress prevention practices in Tennessee public school districts, the target population for this survey research project was the entire group of active public school systems in the Volunteer State. All 137 elements of the population frame are listed in the Tennessee SDE directory (Tennessee Department of Education, 2013), and this Web-based directory was used to recruit public school districts for participation in the study. As with several other studies described in the school health services literature (Foster et al., 2005; Kann et al., 2007; Kolbe et al., 1995; Lever et al., 2010), the respondents in the current study were school system personnel who were selected to represent their districts in the survey on the basis of their knowledge of prevention

programming and services for students. This methodological issue is discussed in greater detail later in this chapter.

Sample size analysis. The main consideration in the sample size determination process was establishing the minimum number of Tennessee school districts required to ensure that the planned significance tests for this study (i.e., chi-square tests) would have sufficient power to detect relationships that may exist between district demographic characteristics and programming and services prevalence (Price, Dake, Murnan, Dimmig, & Akpanudo, 2005; Sawyer, 1992). In the quest to address this methodological issue, a series of a priori power analyses were performed using statistical software provided by a research consulting company called Statistics Solutions (Statistics Solutions, 2012).

The G* Power 3.1.2 program (Faul, Erdfelder, Lang, & Buchner, 2007; Kelley et al., 2003; Statistics Solutions, 2012) was used to obtain a series of power estimates for the Pearson chi-square test of independence based on the respective degrees of freedom (dfs) for the various bivariate chi-square calculations that would be conducted on the different combinations of categorical variables under consideration in theses analyses. These statistical estimates were deemed necessary to ensure that all planned chi-square calculations had adequate power to detect relationships among the variables of interest in this study. In addition, the specific significance, power, and effect size (*w*) levels chosen for these analyses represent common input values used in statistical power analyses for chi-square (Cashen & Geiger, 2004; Cohen, 1992; Price et al., 2005). The results of these a priori power calculations indicated that chi-square tests with 4 dfs and the strength to

detect small to medium effects required a sample size that approached or exceeded the school district population size (N = 137) in this study (see Table 2). Thus, I determined that the estimated sample size requirement for chi-square tests with 4 dfs and the strength to detect large effects was the estimate best suited for the current study's small population size.

Table 2

Sample Size Estimates for Chi-Square

df(s)	α	Power	*w* 0.1*	0.3*	0.5*
1	.05	.80	785	88	32
2	.05	.80	964	108	39
3	.05	.80	1091	122	44
4	.05	.80	1194	133	48

**Note.* From *"A power primer,"* by J. Cohen, 1992, *Psychological Bulletin*, *112*, p. 158.

With that said, initial consideration was given to the use of the G* Power sample size estimate of 48, which at first glance appeared sufficient to accommodate the power needs of the bivariate chi-square tests described in the data analysis section of this chapter (Cohen, 1988, 1992). However, while the G* Power estimate of 48 school districts represented a good starting point for determining the minimum sample size needed to ensure that the chi-square analyses had adequate power, its level of accuracy as a sample size estimate became questionable after taking into account the potential statistical power threat posed by survey unit nonresponse (Bosnjak, Tuten, & Wittmann,

2005; Brick & Kalton, 1996). More specifically, given the finding that the typical response rate range for postal and Web-based surveys is 45 to 60%, it became evident that a large percentage of the estimated 48 school districts required for this study might choose not to participate in the survey (Asch, Jedrziewski, & Christakis, 1997; Baruch & Holtom, 2008; Fincham, 2008; Schonlau, Fricker, & Elliott, 2002). Thus, in light of this potential power threat, it became evident that the initial sample size estimate would need to be adjusted upward to ensure that a sufficient number of surveys were returned to produce accurate statistical results (Kelley et al., 2003).

With that in mind, I determined that the initial G* Power sample size estimate of 48 school systems was inadequate and would need to be revised upward to approximately 100 districts to accommodate the threat of nonresponse and ensure a survey response rate that is sufficient to meet the statistical power requirements of this study. In addition, given the fact that the revised sample size estimate for this study would be close to the size of the target population, it became apparent that the most prudent strategy would be to survey all 137 public school systems currently listed in the Tennessee SDE directory. Thus, a decision was made to utilize the population survey census method in an effort to maximize the survey response potential of this study (Fricker, Jr., 2008).

Recruitment and Participation

Recruitment plan. Due to the fact that the units of observation in this study were intended to be Tennessee public school districts rather than students, the participant recruitment process took place at the level of the school system. In this process efforts were made to follow guidelines for district-level recruitment provided in the school

health services literature (Foster et al., 2005; Kann et al., 2007; Kolbe et al., 1995; Lever et al., 2010; Rohrbach et al., 2005). The first step in this recruitment effort involved making contact (i.e., telephone, e-mail, or postal communications) with school system administrators across the state in order to identify appropriate contact persons who were knowledgeable about district-wide prevention programming and service activities and who could potentially represent their school systems in the survey. After obtaining this information, I sent personalized advance-notice letters to all prospective district respondents to inform them about the upcoming survey participation request (Sue & Ritter, 2012). This preliminary letter explained the purpose, topic, and sponsor of the survey, and it also informed districts about the study's confidential nature (Dillman, 2007; Link, 2008; Shuttles, 2008). This advance contact protocol was used as a means of reducing the survey nonresponse rate (De Leeuw, Callegaro, Hox, Korendijk, & Lensvelt-Mulders, 2007; von der Lippe, Schmich, & Lange, 2011), which tends to be higher when prospective respondents have not had contact with researchers prior to receiving formal participation requests (Hembroff, Rusz, Rafferty, McGee, & Ehrlich, 2005; Kelley et al., 2003; Wright, 1995). The timing of the prenotification letter was approximately one week prior to mailing the survey invitation and questionnaire to public school systems in the state of Tennessee.

Inclusion and exclusion criteria. The recruitment pool for this study was limited to the population of public school systems listed in the Tennessee SDE directory. In addition, eligible respondents were limited to public school system personnel who had been identified by district administrators as being knowledgeable about stress-related

prevention activities in their school systems. It was assumed for the purpose of this study that school system administrators were in the best position to know which professional staff members were most likely to be able to provide accurate information regarding the prevalence and characteristics of stress prevention programming and services for students in their districts.

Participation plan. This study was intended to be a cross-sectional survey research project in which descriptive data were collected from school district respondents at a single point in time (Kelley et al., 2003). The estimated time commitment for participating school districts was approximately 10-15 minutes. School systems that accepted the survey invitation entered the study by filling out the questionnaire and they exited at their own discretion either by terminating the survey early or after completing and returning it. All prospective participants were provided with my contact information (i.e., telephone number and e-mail address) to ensure that districts with any questions or concerns about the survey or the participation process could receive timely assistance and feedback.

In addition, given that this survey research project was carried out remotely and did not involve subjecting participants to either deceptive or potentially sensitive questions or controlled research conditions that placed them at risk for psychological, emotional, and/or physical harm or discomfort, the postsurvey debriefing procedure has been limited to four main objectives (Scanlan, 2008):

- Expressing gratitude to respondents for their time and effort.
- Reiterating the purpose of the study and its informational objectives.
- Explaining the study's potential social change implications for young Tennesseans.
- Informing participants about how they can obtain a summary report of the survey results.

Data Collection

As mentioned previously in this discussion, the cross-sectional survey research approach has been the preferred methodology in studies to date on school-based mental health services for children and youth, and it was also the most logical methodological choice for achieving the descriptive informational objectives of this study. Likewise, as with previous studies of relevance to this research project, a questionnaire was developed for the current study as no published survey instruments were available for use in answering the research questions that guided this descriptive research (CDC, 1994a, 1994b, 2000a, 2000b, 2000c, 2006a, 2006b, 2006c; Foster et al., 2005; Lever et al., 2010; Rohrbach et al., 2005). Thus, instrument design was an essential component of the data collection plan for the current study.

Questionnaire design strategy.

The initial step in the survey development process was identifying the major research concepts associated with the current study from which the research questions and variables of empirical interest would be derived (Nardi, 2003). With that in mind, one of the central concepts in this study was the school stress prevention practices

construct, which was conceptually defined as curriculum-based programs and mental health services carried out in schools for the purpose of reducing stress and stress-related symptoms in general student populations (Frydenberg et al., 2004; Kraag et al., 2006; O'Connell et al., 2009). The construct's main measurable characteristics (i.e., curriculum-based stress prevention programming and school-based stress prevention services) were operationalized to produce two sets of variables on which primary descriptive data were gathered (see Table 3). These sets of variables were converted into specific survey items designed to collect descriptive information that addresses the first two research questions presented in Table 1, and these items were placed in Sections B and C of the questionnaire as shown in Appendix A.

Table 3

Measurable Characteristics of the School Stress Prevention Practices Construct

Curriculum-based stress prevention programming	School-based stress prevention services
Programming prevalence	Service prevalence
Programming distribution	Service distribution
Programming targets	Service targets
Programming objectives	Service objectives
Programming types	Service types
Programming facilitators	Service providers
Programming intensity	Service delivery model

The other major concept of importance in the survey development process was Tennessee school districts, which was nominally defined in this research project as an

LEA in the state of Tennessee that employs teachers and that is administratively responsible for providing educational instruction and support services to children and adolescents (Strizek et al., 2006). In an effort to answer the third research question of empirical interest in this study (see Table 1), the measurable demographic characteristics of the Tennessee school district concept were selected as an additional set of variables (see Table 4). These demographic variables were transformed into Items 2-7 in Section A of the questionnaire, and Items 2-7, 8, and 15 were designed to collect the descriptive data required for examining the association between school district characteristics and stress prevention programming and services prevalence.

Table 4

Measurable Characteristics of the Tennessee School District Construct

Demographic factors
Geographic location
Community type
Size (number of schools)
Total student enrollment
Minority student enrollment
Levels of educational instruction

Validity issues. Based on the fact that the survey used in the current study was not an established instrument with known measurement properties, efforts were made to improve its construct validity by examining the school health services literature for insights into how best to operationalize the major concepts from which the survey items

were derived. For example, the school district demographic variables used to construct Survey Items 2-7 in Section A of the instrument were drawn from prior school health services studies (Brener et al., 2003; Foster et al., 2005; Slade, 2003; Steinberg & Steinberg, 2006; Strizek et al., 2006; Sturm, Ringel, & Andreyeva, 2003), and were selected on the basis of their perceived usefulness in answering the third research question outlined in Table 1. Likewise, several survey items in Section B (i.e., 11, 12-14) and in Section C (i.e., 18, 19-21) were derived from information provided in the extant research literature that informed the process of operationalizing the school stress prevention practices construct (Adelman & Taylor, 1993, 1999; American Academy of Pediatrics, Committee on School Health, 2004; Brener et al., 2001; Brock et al., 2011; CDC, n.d.b; Center for School Mental Health Assistance, 2002a; Foster et al., 2005; Gottfredson & Gottfredson, 2002; Lever et al., 2010; Pincus & Friedman, 2004).

Additional survey items were constructed using the *reasonableness* standard as a guide for transforming the school stress prevention practices construct into a measurable form that would yield the descriptive data needed for answering the research questions pertaining to the construct (Gerring, 2001; Goldbeck, 1986). More specifically, Survey Items 8 and 15 were designed to measure the programming/services prevalence variables derived from the process of operationalizing the school stress prevention practices concept. Similarly, Survey Items 9 and 16 were developed to measure the programming/services distribution variables obtained using the same concept operationalization procedure. The remaining questions (i.e., 10, 17) inquired about

programming/services population targets and were also constructed to reflect operationalized characteristics of the school stress prevention practices construct.

In addition to these survey validity enhancement strategies, constructive input and feedback were solicited from an expert panel of school-based professionals from five U. S. states: (a) Arizona, (b) Ohio, (c) Massachusetts, (d) New Jersey, and (e) Virginia. This diverse group of approximately 20 individuals included high-level school administrators, classroom teachers, and pediatric mental health professionals (i.e., clinical social workers, guidance counselors, and school psychologists). The panelists were identified using a professional networking strategy and were asked to provide candid feedback regarding their impressions of the questionnaire's overall construct, content, and face validity (Burton & Mazerolle, 2011).

This constructive feedback was useful and resulted in substantive changes to the instrument that helped improve its overall quality and potential ease of use by study participants. For example, although there was a general consensus among panelists that the survey items appeared relevant to the study topic and were suitable for achieving the information gathering objectives of this study, it was recommended that changes be made to decrease the questionnaire's wordiness and omit some of the response category options in several items that could potentially increase participants' response time. In addition, it was recommended that the total number of survey questions be limited to 15-20 items, as several of the panelists emphasized that school district personnel are generally quite busy and would not likely spend more than 15-20 minutes working on the survey. Also, the majority of the professionals who commented on the data collection plan indicated that

the promise of a charitable donation was a potentially useful strategy for generating interest in the survey—particularly among prospective district respondents who lacked intrinsic interest in the survey topic.

Another measurement-related concern was the issue of external validity, which can be significantly degraded in survey research in the absence of a high survey response rate (Sivo, Saunders, Chang, & Jiang, 2006). To address this concern, an evidence-based survey administration plan was employed (discussed later in this chapter) to reduce the risk of nonresponse bias that could potentially undermine the generalizability of the study findings (Armstrong & Overton, 1977). In addition, a post hoc statistical analysis (also discussed later) was conducted in an effort to examine nonresponse patterns in the survey data (Curtis & Redmond, 2009).

Survey administration plan. The first decision that was made regarding the survey delivery plan was deciding whether the structured interview or self-administration approach made the most sense for this study (Bowling, 2005). More specifically, given that the target population in this study was geographically dispersed across the state of Tennessee, it became apparent that the face-to-face interview method would not be the best choice for administering the questionnaire due to the extensive time and travel requirements associated with efforts to reach districts in more distant areas of the state (Sue & Ritter, 2012). Likewise, even though the telephone survey delivery format would provide the wide geographic reach required to meet the data gathering objectives of this study (Sue & Ritter, 2012), the majority of panelists who provided feedback on the questionnaire cautioned that most school district employees would probably not be

willing to spend 15-20 minutes on the telephone with a survey interviewer during a typical workday in which they are already overburdened with time commitments. Instead, the panelists recommended that the self-administration survey method be used as it would allow respondents to take the survey at their own leisure. Thus, on the basis of these practical considerations, the self-administered survey approach was used in the current study.

The other important consideration in formulating a survey delivery plan was deciding whether the self-administered questionnaire should be delivered to school districts electronically or through the mail. More specifically, the decision to go with the postal survey delivery mode was based on two information sources: (a) the school health services literature, and (b) comparative outcome data on response rates for different survey delivery modes. With respect to the first information source, it is noteworthy that the majority of the school health services studies discussed in the literature review used the postal survey delivery format to reach respondents (Foster et al., 2005; Gottfredson & Gottfredson, 2002; Kann et al., 2007; Kolbe et al., 1995; Rohrbach et al., 2005). In addition, while electronic data collection methods have been described as the wave of the future in survey research (Sue & Ritter, 2012), current evidence indicates that postal questionnaires tend to produce higher response rates than Web-based surveys in general (Converse, Wolfe, Huang, & Oswald, 2008; Kwak & Radler, 2002; Schonlau et al., 2002; Shih & Fan, 2008).

Survey administration schedule. Due to concerns over the potential for a low response rate in the absence of contact with school systems prior to launching the survey

(Kelley et al., 2003), I sent a survey announcement letter to all prospective respondents during Phase I of the survey administration process (Kwak & Radler, 2002). The postal questionnaire was then mailed out to all potential respondents approximately one week after the survey announcement letter was sent to them (Phase II). The timeframe for data collection in Phase II was four weeks. While the level of school district participation in Phase II ended up exceeding the study's sample size requirement of 48 school systems, a second wave of the survey was nevertheless sent out to nonresponding districts (Phase III) in an effort to promote additional school district participation. The subsequent closing date for the survey was exactly three months after the original questionnaire launch date (Kwak & Radler, 2002). Finally, the target district response rate for this survey research project was 50 percent (Babbie, 2013).

Response rate enhancement strategy. In an effort to increase both the unit and item response rates in this study, six evidence-based participation enhancement strategies were incorporated into the survey administration plan (Edwards et al., 2002; Fox, Crask, & Kim; Patel, Doku, & Tennakoon, 2003):

- Advance letters announcing the survey and requesting participation.
- 1st class outgoing postage for mailing questionnaires.
- Stamped self-addressed return envelope in the survey packet.
- Repeat survey mailings as needed.
- Telephone, e-mail and/or postal contact with prospective respondents as needed.
- Use of colored questionnaires.

- Tracking of survey response patterns.
- Postal notification of the survey cut-off date.

Data Analysis Plan

The initial step in the data analysis plan for this research project was data preparation (Fowler, Jr., 2009), which began with an inspection of all returned questionnaires to determine the accuracy and completeness of the responses provided by school districts. This information was cleaned as needed (e.g., coding missing values and write-in text responses) and then transformed into a computer-readable form (i.e., separate code and data files; IBM, 2013). The code file contained the school district ID coding scheme as well as the designated variable and response value labels for each survey item. Also, the SPSS data file included columns for all measured variables and rows for the participant identification (ID) numbers (Nardi, 2003). In addition, the study variables were organized in the SPSS data editor window in a manner that corresponded with the questionnaire's item structure in order to create a user-friendly database that made it easier to locate variables as well as record and inspect the data (Trochim & Donnelly, 2006). Finally, after I screened and prepared the information contained in the surveys, all incoming data were recorded, saved, and analyzed using SPSS Version 22 (IBM, 2013).

Statistical procedures. The data analysis plan began with the calculation of grouped frequency statistics for all variables presented in Tables 3 and 4 in order to generate the descriptive information needed for answering the first two research questions that guided this research project (see Table 1). These frequency calculations

included raw counts and percentages for each category of each variable as well as the cumulative frequency/percent of responses for each level of each variable (Larson, 2006). It was anticipated that these univariate statistical analyses would yield descriptive findings on the prevalence and characteristics of stress prevention programs and services for students in public school systems across Tennessee.

After completing these frequency calculations, cross-tabulation analyses were conducted on various combinations of paired variables for the purpose of answering the third research question (see Table 1). In the first series of planned tabulations, each contingency table contained two columns representing yes/no responses for programming prevalence, and the number of rows in each table corresponded with the number of response categories for the specific demographic variable being analyzed. Likewise, in the second series of planned tabulations, each contingency table contained two columns representing yes/no responses for service prevalence, and the number of rows in each table corresponded with the number of response categories for the specific demographic variable being analyzed (Ho, 2006). In addition, based on the fact that cross-tabulation analyses do not indicate whether identified relationships between variables represent true statistical associations or the effects of random chance, chi-square and Fisher's exact tests (FETs) were performed on the tabulated variables (as indicated) to determine their statistical significance (Campbell, 2007, McDonald, 2009; Nardi, 2003).

Other planned statistical procedures included calculating the survey response rate and using chi-square tests to assess nonresponse bias effects, as these estimates provided insights into the generalizability of the survey results obtained in the current study

(Curtis & Redmond, 2009; Radhakrishna & Doamekpor, 2008; Sivo et al., 2006). This analysis entailed the comparison of counts of categorical responses for two participant subgroups: (a) early responders, and (b) late responders. The core assumption underlying this extrapolation method is that late responders tend to be similar to nonresponders (Armstrong & Overton, 1977; Sivo et al., 2006). For the purpose of this analysis, early responders were school districts that completed and returned the questionnaire before the end of Phase II of data collection,, and late responders were school districts that completed and returned the survey thereafter.

Another important consideration in the data analysis plan for this study was checking for the presence of missing values (item nonresponse) in the dataset, which began with a visual inspection of all returned questionnaires (Hutchinson & Alba & 1997; Orr, Sackett, & Dubois, 1991). In this inspection process, only a small number of missing values were found in the dataset. Thus, on the basis of this finding, it was evident that additional frequency analyses using dummy variables would not be needed to ascertain the distribution of missing observations in the data file (Chen & Astebro, 2003; Finch, 2010).

Ethical Procedures

The first ethical consideration in the survey administration plan for this study was informed consent, which involved obtaining participants' implicit consent to participate in this survey research project. The implicit endorsement procedure entailed providing each prospective district respondent with a traditional paper-and-pencil questionnaire that included a cover page containing essential study-related information outlined in Walden

University's IRB form (Walden University Center for Research Quality, 2013). The cover letter also included an implied consent statement that contained the following information for potential respondents: (a) participation is voluntary, (b) taking the survey indicates a respondent's willingness to participate in the study, and (c) respondents have the right to discontinue participating in the study at any point without penalty (Curtis & Redmond, 2009; Walden University Center for Research Quality, 2013).

Other pertinent ethical considerations included the need to safeguard each participant's anonymity and confidentiality. With respect to the issue of anonymity, contact information was obtained for all prospective district respondents in order to facilitate the distribution of the questionnaire and to track which school districts did and did not require repeat study invitations and survey mailings, but each survey instrument contained only a numerical ID code so that districts could not be identified on the basis of the information they provided in the survey (Patel et al., 2003). Participant anonymity was further safeguarded by presenting the findings of this study in aggregate form and by not identifying school districts by name in any reports associated with this research project. In addition, with regard to the issue of confidentiality, I made efforts to prevent persons other than myself from gaining access to the survey information provided by individual districts through data security measures that included coding questionnaires to de-identify participants' responses and using separate password-protected files to store participant ID numbers and survey data, respectively (Easter, Davis, & Henderson, 2004). These ethical procedures are described in detail in the IRB form for this study.

Conclusion

This Chapter 3 discussion has provided an overview of the methodological characteristics of the census survey research method used in the current study on school district stress prevention practices in the state of Tennessee. As noted earlier, this descriptive quantitative study was intended to generate needed empirical information that can inform the efforts of educators and school mental health professionals to initiate or improve stress prevention programs and services that foster the adaptive self-regulatory development of young Tennesseans. This social change objective is in line with current scientific opinion on the role of school-based prevention initiatives in fostering positive developmental outcomes in children and youth (O'Connell, 2009). With that said, Chapter 4 presents an overview and analysis of the descriptive findings of this study.

Chapter 4: Results

Introduction

The purpose of this quantitative survey research project has been to generate empirical data on stress prevention practices in public school systems in the state of Tennessee, which can inform the work of educators and school health professionals with an interest in programs and services that foster the adaptive competence of students. In the absence of an established survey instrument for use in this study, a self-administered paper questionnaire was developed (with expert panel guidance) and provided to school systems listed in the SDE directory for Tennessee (Tennessee Department of Education, 2013). The instrument was designed to collect descriptive data for answering study-related questions pertaining to the prevalence and characteristics of stress prevention programs and services for students, and the association between school district demographic characteristics and programming and services prevalence. It is further noteworthy that the information parameters of this study were limited to a descriptive overview of stress prevention programs and services for students in Tennessee public school systems and did not include the measurement of outcomes of such programs and services.

With that in mind, Chapter 4 begins with a description of the data collection procedures used in the current study and includes information about the time frame for data collection and the research population on which survey data were obtained. In addition, the descriptive findings of the study are presented. Finally, Chapter 4 includes a

summary of the answers to the research questions, and it concludes with a brief transition to Chapter 5 in which the findings of this study are discussed.

Data Collection Procedures

The initial step in the participant recruitment process involved efforts to identify all elements of the study population using the Tennessee SDE directory (Tennessee Department of Education, 2013). Although the directory indicates a current population size of $N = 138$ active public school systems, the sample size for the survey ended up being $N = 135$ districts as two school systems merged with another district and no longer operate as independent educational institutions, and efforts to reach one additional school system by phone/e-mail were unsuccessful. Thus, all but one of 136 active public school systems in the state of Tennessee were included in this quasi-census survey study. It should also be mentioned that it was necessary to perform Google searches to verify the accuracy of the school system contact information provided in the Tennessee SDE directory, as this information was not complete and accurate for some districts. This exercise proved fruitful and provided confirmation that the threat of survey coverage error within the target population would not be a potential problem during data collection (Mulry, 2008).

Participant Recruitment Strategy and Materials

At the outset of the recruitment process, efforts were made to contact the superintendent's office of each public school system in the state of Tennessee by phone. This strategy was based on the assumption that the head administrative official in each district is in the best position to know which of his or her staff is knowledgeable about

stress-related programs and services for students and would be best suited to represent his or her school system in the survey. The value of this recruitment strategy became visible over time, as I discovered during the process of communicating with school systems that they do not all have the same programmatic administrative arrangements or types of professionals overseeing prevention-oriented educational programming and mental health services for students.

Early in the process of contacting school districts (October 2013 time frame) it also became apparent that some superintendents were not easily accessible by phone, and that postal and e-mail modes of communication would also need to be utilized to meet the study's district recruitment objectives. To address this issue, superintendent contact letters (see Appendices B and C) were subsequently sent along with survey announcement letters (see Appendix D) to prospective school system participants (as needed) using either postal or e-mail delivery methods. Districts that were contacted via postal communication received the two letters in an 8 ½ x 11 catalog envelope, and school systems that were contacted electronically received the superintendent contact letter in the form of an e-mail along with the survey announcement letter as an attachment. By the end of November 2013, 135 of the 136 active public school systems in the state of Tennessee had been contacted by phone, mail, or e-mail. During this contact process I obtained guidance from superintendents and other school system staff regarding to whom to send survey packets. On the basis of this guidance, survey packets were then mailed to appropriate school system personnel.

Survey Administration and Outcome

The time frame for data collection was approximately two and a half months and overlapped somewhat with the recruitment process, as the first wave of the survey was launched over a period of time in accordance with the timing of individual district responsiveness to the study announcement. Survey packets containing the paper questionnaire (see Appendix A), study consent form (see Appendix E), and an 8 ½ x 11 prestamped self-addressed return envelope were mailed to public school systems in Tennessee in 9 x12 catalog envelopes. Over a period of approximately five weeks from late November through December 2013, 56 public school systems across the state of Tennessee completed and returned the questionnaire to my home address.

While the level of school district participation in the initial phase of data collection ended up exceeding the study's sample size requirement for statistical power (48 school systems), I decided to launch a second wave of the survey following the school holiday break to promote additional school district participation. The second mailing took place during January 2014 and survey packets containing a duplicate questionnaire, the consent form, a revised superintendent contact letter (see Appendix F), and an 8 ½ x 11 prestamped self-addressed return envelope were mailed to school districts that had not yet participated in the study. The decision to use only the revised contact letter in the second mailing stemmed from prior feedback from districts in which administrators in general expressed a preference for survey packets being sent to them for distribution or routing within their school systems as they saw fit. This data collection protocol yielded an additional 41 survey returns and raised the study's total survey return

rate to 97/135 = 72%, a rate that is higher than the average rate of response (36%) reported by Baruch and Holtom (2008) in their review of survey response levels and trends in organizational research. The level of school system participation in the current study was also close to the 77% district survey return rate achieved in the nationwide CDC-sponsored SHPPS 2012 (CDC, 2013).

Data Analysis Procedures

Data Preparation

In preparing the survey data for analysis, I inspected all questionnaires to determine their item response completeness and accuracy. Thematic content analyses were also performed on all write-in responses for Survey Questions 1, 12, and 20, and each write-in response was interpreted and classified into either a predetermined item response category or into a new category (Fink, 2003). While some of the write-in responses were able to be classified under existing response categories, others required new category assignments to accommodate their specific informational characteristics. Data preparation activities also included a search for missing survey values, which was undertaken for the purpose of identifying the different types of missing data that would need to be differentiated during data analysis. In this process three types of missing survey values were identified: (a) participant nonresponse, (b) response errors, and (c) missing data related to question nonapplicability. These data inspection and cleaning activities served as initial steps in the construction of a codebook for setting up and analyzing the survey data using SPSS Version 22 (IBM, 2013).

Codebook development. In the codebook development process, each survey question was given a unique variable name and descriptive label, and value labels were assigned to all response options for each of the 21 survey items. Distinct missing value labels were also created for each question as needed to represent the different types of missing values identified in the data set, and the answer choices for multiple response items such as Question 6 were coded as separate variables (i.e., 6a, 6b, 6c, and 6d) for the purpose of statistical analysis (Fink, 2003). An ID variable name and descriptive label were also added to the codebook for use in recording participants' survey case numbers and promoting accuracy in the data entry process. In summary, the codebook provided information on how each question-and-answer set was coded, as well as the coding details for recording write-in responses, missing values, and survey cases in SPSS (Carley-Baxter, 2008).

District Demographic Characteristics

The first set of findings concerns the distribution of demographic characteristics of school district participants, whose responses to Survey Items 1-7 were statistically analyzed using the frequencies procedures outlined in Table 5.

Table 5

Statistical Procedures for District Demographic Variables

Procedures	Measured variables	Purpose
Frequency analyses	Geographic location Community type Size—number of Schools Total student enrollment Minority student enrollment Levels of educational instruction Respondent's professional position	Describe district participants

The results of these descriptive analyses are presented in Tables 6 and 7. The findings show that each of the Volunteer State's three geographic regions was represented in the study, and that the highest rates of public school system participation occurred in east and middle Tennessee. Also, 80.4% of respondents described their district location as a small town/rural community, and approximately two thirds of respondents have a school district size of 10 or less schools. In addition, 66% of participants reported a total student enrollment size of between 1,000 and 6,000 students, and most respondents provide levels of educational instruction ranging from preschool through high school. The results further indicate that 72.2% of respondents have a low level of minority student enrollment, and 82.5% of school districts elected to have administrative personnel respond to the survey.

Table 6

Distribution of School District Demographic Characteristics (N = 97)

Variable	Frequency	Percent
Geographic location*		
East TN	38	39.2
Middle TN	36	37.1
West TN	22	22.7
Community type*		
Urban	5	5.2
Urban fringe/large town	13	13.4
Small town/rural	78	80.4
Size—number of schools		
1 - 5 schools	33	34.0
6 - 10 schools	33	34.0
11 - 19 schools	22	22.7
20 or more schools	9	9.3
Total student enrollment		
Less than 1,000	8	8.2
1,000 - 3,000	32	33.0
3,001 - 6,000	32	33.0
6,001 - 10,000	12	12.4
More than 10,000	13	13.4
Minority student enrollment*		
Low (0 - 15%)	70	72.2
Medium (16 - 50%)	22	22.7
High (over 50%)	4	4.1
Respondent's professional position**		
Administrative	80	82.5
Clinical/counseling	13	13.4
Administrative & clinical	1	1.0
Learning support specialist	1	1.0

Note. * = Data are missing for one school district.

Note. ** = Data are missing for two school districts.

Table 7

Distribution of School District Demographic Characteristics (N = 97)

Variable		Yes	
		Freq	%
Levels of educational instruction			
	Preschool	90	92.8
	Elementary school	91	93.8
	Middle school	89	91.8
	High school	87	89.7

Note. Data are missing for one school district.

Programming and Services Prevalence

At this point in the overview of survey findings, it is important to reiterate that stress prevention programming involves teacher-facilitated classroom instruction on ways to reduce stress for general student populations, and stress prevention services entail school-based clinical services provided by health professionals to general student populations for the purpose of reducing stress. With that in mind, the second set of frequency analyses were performed on the data obtained from Survey Items 8 and 15, and were conducted for the purpose of answering the first research question of empirical interest. These procedures are described in greater detail in Table 8.

Table 8

Statistical Procedures for Research Question 1

Procedures	Measured variables	Research question
Frequency analyses	Programming prevalence Service prevalence	How prevalent are stress prevention programming and services for students in Tennessee public school districts?

The results of these frequency tabulations are presented in Table 9. While approximately 63% of respondents reported adopting stress prevention practices with students, the percentage of school districts that currently provide both programming and services is slightly higher than the proportion of school systems that provide programming or services alone.

Table 9

Prevalence of Stress Prevention Programming and Services in Tennessee Public School Districts (N = 97)

Variable	Frequency	Percent
Programming	18	18.6
Services	21	21.6
Both	22	22.7
None	35	36.1

Note. Data are missing for one school district.

Programming and Services Characteristics

Other frequency analyses were carried out on the data obtained from Survey Items 9-14 and 16-21 for the purpose of answering the second research question of empirical interest in this study. These procedures are described in greater detail in Table 10.

Table 10

Statistical Procedures for Research Question 2

Procedures	Measured variables	Research question
Frequency analyses	Programming distribution Programming targets Programming objectives Programming types Programming facilitators Programming intensity Services distribution Services targets Services objectives Services types Services providers Services delivery model	What are the general characteristics of stress prevention programs and services for students in public school districts across Tennessee?

The frequency results for stress prevention programming characteristics are presented in Tables 11 and 12. These findings reveal several programming features of empirical interest: (a) programming is generally not provided by respondents at the preschool level, (b) most programming is directed toward children and adolescents, (c) programs generally place a greater training emphasis on coping with everyday stress than on dealing with emergencies/crises, (d) eclectic programming is the most frequently used stress prevention modality with students, (e) health education/wellness specialists, regular classroom teachers, and school counselors are the main programming facilitators, and (f) variation exists in levels of programming intensity provided by participants to young Tennesseans.

Table 11

School District Stress Prevention Programming Characteristics

Variable		Yes	
		Freq	%
Distribution*			
	Preschool	9	9.3
	Elementary school	34	35.1
	Middle school	35	36.1
	High school	29	29.9
Targets*			
	Children	35	36.1
	Adolescents	34	37.1
Objectives*			
	Coping with everyday	39	40.2
	Coping with emergency/crisis situations	30	30.9
Types*			
	Cognitive behavioral	5	5.2
	Coping skills training	17	17.5
	Crisis prevention & response training	18	18.6
	Mind body	11	11.3
	Psychoeducational	10	10.3
	Eclectic	20	20.6
	Health promotion/wellness	10	10.3
Facilitators**			
	Regular teachers	21	21.6
	Health education/wellness teachers	28	28.9
	Special education instructors	14	14.4
	Classroom resource staff	4	4.1
	Consultants	12	12.4
	School counselors	19	19.6
	Life skills instructors	1	1.0
	Social workers	1	1.0

Note. * = Data are missing for two school districts.

Note. ** = Data are missing for one school district.

Table 12

School District Stress Prevention Programming Characteristics

Variable	Freq.	%
Programming intensity*		
Taught as separate health education-wellness course	5	5.2
Taught as subject in divided course with other subjects	5	5.2
Taught as units or lessons in health-wellness course	6	6.2
Taught as units or lessons in nonhealth-related course	14	14.4
Response error+	11	11.3

Note. * = Data are missing for one school district.

Note. + = Multiple responses to single-answer item.

Service characteristics. Other related frequency results for stress prevention service characteristics are presented in Tables 13 and 14. The following key findings were obtained: (a) services are not generally provided by participants to students at the preschool level, (b) services are generally provided to both children and adolescents, (c) a balanced emphasis is placed on coping with everyday stress and emergency/crisis situations, (d) individual services are provided more frequently than group-based services, (e) service providers are mainly counselors, clinical social workers, nurses, and psychologists, and (f) various service delivery models are utilized by respondents in the provision of stress prevention services to young Tennesseans.

Table 13

School District Stress Prevention Services Characteristics

Variable		Yes	
		Freq	%
Distribution*			
	Preschool	17	17.5
	Elementary school	36	37.1
	Middle school	40	41.2
	High school	36	37.1
Targets*			
	Children	38	39.2
	Adolescents	39	40.2
Objectives*			
	Reducing & managing everyday stress	37	38.1
	Reducing & managing emergency/crisis situations	35	36.1
Types*			
	Individual	41	42.3
	Group	31	32.0
Providers			
	Counselor	40	41.2
	Psychologist	17	17.5
	Social worker	29	29.9
	Nurse	19	19.6
	Mental health caseworker	1	1.0
	Community-based consultant	1	1.0
	Licensed mental health clinician	1	1.0
	Psychotherapist	1	1.0
	4-H officer	1	1.0
	Coordinated school health staff	1	1.0
	Mental health facilitator-liaison	1	1.0

Note. * = Data are missing for one school district.

Table 14

School District Stress Prevention Services Characteristics

Variable	Freq.	%
Services delivery model		
Services coordinated by schools/delivered on school grounds by school-employed clinicians	16	16.5
Services coordinated by schools/delivered on school grounds by community-based clinicians	8	8.2
Services coordinated by schools/delivered on and off campus by school-employed and community-based clinicians	13	13.4
Services coordinated by schools/delivered on school grounds by school-employed and community-based clinicians	2	2.1
Services coordinated by community-based clinicians	1	1.0
Response error+	3	3.0

Note. + = Multiple responses to single-answer item.

School District Factors in Programming and Services Adoption

The third set of statistical tests examined relationships between school district and prevalence variables, and they were conducted for the purpose of answering the third research question of empirical interest in this study. These procedures are outlined in greater detail in Table 15.

Table 15

Statistical Procedures for Research Question 3

Procedures	Variable pairings	Research question
Crosstabs Chi-square Fisher's exact test	Pp by geographic location Pp by community type Pp by size--number of schools Pp by total student enrollment Pp by minority student enrollment Pp by levels of educational instruction Sp by geographic location Sp by community type Sp by size--number of schools Sp by total student enrollment Sp by minority student enrollment Sp by levels of educational instruction	Are school district characteristics associated with the availability of stress prevention programs and services for students in Tennessee?

Note. Pp = Programming prevalence.

Note. Sp = Service prevalence.

In this series of bivariate analyses, crosstabs statistics were computed for all paired variables, and specific significance tests (i.e., Pearson's chi-square test of independence or the FET) were then performed on the cross-tabulation data sets as indicated. The chi-square procedure was used in these analyses only when the following test assumptions were met: (a) all observations were independent, (b) at least 80% of the cells in the cross-tabulation table contained five or more observations, and (c) each cell in the table contained at least one observation (Agresti, 2007; Yates, Moore, & McCabe, 1999). When these assumptions were not met, the FET was used in place of the chi-square procedure as recommended in the literature (Campbell, 2007; McDonald, 2009). The

FET assumes that all observations in a contingency table are independent and that all row and column marginal totals are fixed (Campbell, 2007; McDonald, 2009), and both assumptions were met for these analyses. It should also be noted that the significance level was set at $\alpha = .05$ for all tests.

In addition to tests of independence, adjusted standardized residuals were computed for chi-square and FET tables greater than 2 X 2 in an effort to identify which cell combinations in the tables contributed to significant test results (as applicable). As a type of z-score, the standardized residual measures how many standard deviations from the expected cell count an observed count is in a contingency table (Agresti, 2007). In examining the adjusted residuals in each table, attention was given to cell residual values of 2.0 or greater (Agresti, 2002).

The findings of the bivariate analyses for prevalence by school district characteristics are presented in Table 16. The FET results for programming prevalence by school district community type were statistically significant ($p = .012$), and indicate that stress prevention programming rates differ according to the type of community in which school systems are located. As shown in Table 17, while all 5 urban school district respondents (100%) reported adopting stress prevention programming, only 7 out of 13 urban fringe/large town respondents (53.8%) and less than half of the 76 small town/rural respondents currently provide such programming to students in Tennessee. The adjusted standardized residuals for these variables show that programming prevalence is highest among districts in urban locales and lowest among small town/rural school systems.

Table 16

Summary of Findings of Bivariate Analyses for Prevalence by School District Demographic Characteristics

Variables	Test	χ^2	*p*-value
Programming			
Geographic location	Chi-square	2.26	.324
Community type	FET	N/A	.012
Size—number of schools	Chi-square	1.69	.638
Total school enrollment	Chi-square	2.36	.669
Minority student enrollment	FET	N/A	.130
Preschool educational instruction	FET	N/A	.697
Elementary school educational instruction	FET	N/A	1.000
Middle school educational instruction	FET	N/A	1.000
High school educational instruction	FET	N/A	1.000
Services			
Geographic location	Chi-Square	3.18	.204
Community type	FET	N/A	.717
Size—number of schools	Chi-square	1.71	.634
Total school enrollment	Chi-square	8.92	.063
Minority student enrollment	FET	N/A	.468
Preschool educational instruction	FET	N/A	1.000
Elementary school educational instruction	FET	N/A	1.000
Middle school educational instruction	FET	N/A	1.000
High school educational instruction	FET	N/A	.727

Note. FET = Fisher's exact test.

Note. N/A = Not applicable.

Table 17

Cross-Tabulation of Stress Prevention Programming Prevalence by School District Community Type (N = 94)

	Programming Prevalence	
Community Type	Yes	No
Urban (frequency)	5	0
Expected count	2.1	2.9
% Within community	100.0	0.0
Adj. std. residual^	2.7	-2.7
Urban fringe/large town (frequency)	7	6
Expected count	5.5	7.5
% Within community	53.8	46.2
Adj. std. residual^	0.9	-0.9
Small town/rural (frequency)	28	48
Expected count	32.3	43.7
% Within community	36.8	63.2
Adj. std. residual^	-2.3	2.3
Total (frequency)	40	54
Expected count	40.0	54.0
% Within community	42.6	57.4
% Total	42.6	57.4
Fisher's exact test, $p = .012$		

Note. ^ = Adjusted standardized residual.

Survey Nonresponse Bias Analysis

Chi-square tests of independence were also conducted to rule out survey nonresponse effects, which, if present, would impact the generalizability of the findings from those who completed the survey to the remaining school districts in the study population that did not participate (Curtis & Redmond, 2009; Radhakrishna & Doamekpor, 2008; Sivo et al., 2006). The tests assessed differences in programming and

service prevalence between two participant subgroups: (a) early responders, and (b) late responders. Early responders were the 56 public school systems in the state of Tennessee who completed and returned the survey during the first wave of the survey administration process, and late responders consisted of the 41 public school systems that completed and returned the questionnaire during the second wave of data collection. The core assumption underlying this evidence-based extrapolation method is that the characteristics of late respondents tend to be similar to those of nonrespondents (Armstrong & Overton, 1977; Miller & Smith, 1983; Sivo et al., 2006). The results of these chi-square analyses were nonsignificant, thus suggesting an absence of significant differences in programming and services prevalence between the two groups (see Table 18).

Table 18

Summary of Findings for Prevalence by School District Respondent Type

Variables	χ^2	*p*-value
Programming		
Early vs. late responders	1.93	.165
Services		
Early vs. late responders	0.19	.662
Both		
Early vs. late responders	0.26	.610

Summary

In the current study, 135 public school systems in the state of Tennessee were selected to participate in the postal survey and 97 school systems completed and returned the questionnaire, resulting in a total survey response rate of 72%. The prevalence findings indicate that approximately 63% of the sampled school districts have adopted stress prevention practices with students. The findings also show that the percentage of respondents that currently provide both programming and services is slightly higher than the proportion of school systems that provide programming or services alone. Other frequency results for school district stress prevention practice characteristics include the following main findings:

- Most program and service adopters target both children and adolescents.
- Programs and services are least frequently provided at the preschool level.
- Program and service adopters place a similar level of training emphasis on coping with everyday stress.
- Program adopters place less emphasis than service adopters on coping with emergency/crisis situations.
- Program adopters most frequently use eclectic programming methods.
- Individual stress prevention services are provided more frequently than group-based services.
- The main programming facilitators are health education/wellness instructors, regular classroom teachers, and school counselors.

- The main stress prevention service providers are school counselors, social workers, psychologists, and nurses.
- Not all program adopters spend the same amount of classroom time (instructional intensity) on stress prevention activities with students.
- Various service delivery models are utilized by participants in the provision of services to young Tennesseans.

Finally, bivariate analyses for prevalence by school district characteristics revealed a statistically significant relationship between programming prevalence and school district community type, in which it was determined that programming prevalence was highest among urban school districts and lowest among small town/rural school systems in the state of Tennessee.

With these survey results in mind, Chapter 5 provides further analysis and interpretation of the study findings for the purpose of discerning how they can inform future research and practice related to school-based stress prevention practices with children and adolescents. Chapter 5 also includes an overview of the limitations of this study, and recommendations are provided for future research that builds upon the findings of the current study and that supports the goal of positive social change in the lives of children and adolescents.

Chapter 5: Summary, Conclusions, and Recommendations

Introduction

The current study was carried out for the purpose of generating descriptive data on school district stress prevention practices in the Volunteer State. These data included information on the prevalence and characteristics of stress prevention programs and services for children and adolescents, and how such characteristics vary among school districts. The study was limited to a descriptive overview of school district stress prevention practices with students and did not include the measurement of outcomes of such activities. These data are intended to foster social change by informing the work of Tennessee educators and school health professionals who seek to adopt or improve programs and services that promote students' adaptive competence.

From 135 active public school systems in the state of Tennessee, 97 (72%) completed and returned the questionnaire. All survey results are described in detail in Chapter 4, including the following main findings:

- A majority of school system participants have adopted stress prevention practices with young Tennesseans.
- Most program and service adopters target children and adolescents.
- Programs and services are least frequently provided at the preschool level.
- Program and service adopters place a similar level of training emphasis on coping with everyday stress.
- Program adopters place less emphasis than service adopters on coping with emergency/crisis situations.

- Program adopters most frequently use eclectic programming methods, which incorporate a variety of techniques drawn from different stress prevention programming modalities.
- Individual stress prevention services are provided more frequently than group-based services.
- Health education/wellness instructors, regular classroom teachers, and school counselors are the main program facilitators.
- School counselors, social workers, psychologists, and nurses are the main stress prevention service providers.
- Not all program adopters spend the same amount of classroom time (instructional intensity) on stress prevention activities with students.
- Programming prevalence is highest among school district respondents in urban locales and lowest among small town/rural school systems.

Chapter Preview

Chapter 5 begins with an overview of how the survey results contribute to the scientific literature on stress-related health practices with children and adolescents in the school environment. The findings are also analyzed within the context of the study's theoretical framework, and the limitations of this research project are discussed. In addition, recommendations for further research are presented based on the strengths and limitations of the current study. Finally, Chapter 5 concludes with my thoughts regarding how the descriptive results of the current study can potentially benefit young Tennesseans.

Interpretation of Findings

The current study was intended to generate empirical insights that add to the body of knowledge on stress-related health practices with students in public school systems in the United States. In this research effort, survey results were obtained on current stress prevention practices in Tennessee school districts. The relevance of these findings for research and practice is best gauged within the context of the existing school health services literature. An examination of this literature reveals knowledge gaps in the area of stress prevention programming and services for students in the Volunteer State that have been addressed in this study.

How Study Findings Extend Past Research

In the current study, I found that 41% of Tennessee public school systems provide stress prevention programming (curriculum-based instruction) to general student populations, and 44% provide stress prevention services delivered by health professionals. These results advance the scientific knowledge on stress-related school health practices by providing information on prevention-oriented activities with students that has not been reported previously. More specifically, while researchers in the SHPPS 2006 found that 57% of elementary schools, 75% of middle schools, and 88% of high schools across the nation provide instruction to students on ways of dealing with stress, these findings do not indicate the extent to which school systems have placed a didactic emphasis on stress prevention training (Kann et al., 2007). Similarly, although recent CDC studies indicate that approximately 95% of U.S schools provide crisis-oriented mental health services and over 80% provide stress management services, these findings

do not reveal the extent to which such stress-related health practices constitute prevention-related activities with general student populations (Brener et al., 2001; Brener et al., 2007). In contrast, the current study is the first to report on the prevalence and characteristics of stress prevention programs and services for children and adolescents in public school districts in a U.S. state.

The results of the current study further indicate that while a majority of Tennessee school district respondents have adopted stress prevention practices with children and adolescents, only 9% of program adopters and 17% of service adopters engage in stress prevention activities with children at the preschool level. These findings are similar to the stress education distribution patterns identified in the SHPPS 2006, which suggest that stress-related educational services are available to students across the nation only at elementary, middle, and high school levels (Kann et al., 2007). Although these programming/service distribution trends are not explained by current findings, it is possible that preschoolers' limited access to stress-related programs and services is attributable in part to the common misconception that younger children do not experience appreciable levels of stress (Witkins, 2000). Nevertheless, this issue constitutes a research worthy problem, as many young children experience adjustment problems and socioemotional distress in the preschool classroom environment (Fantuzzo, Bulotsky-Shearer, Fusco, & McWayne, 2005).

Other findings of this study study show that health education/wellness instructors (29%), regular classroom teachers (22%), and school counselors (20%) are the main facilitators of stress prevention programming among school system participants. These

results build on the findings of both the SHPPS 1994 and the follow-up 2006 CDC survey, in which teachers were identified as the main providers of stress-related health instruction in schools across the nation (Kann et al., 2007; Kolbe et al., 1995). With that said, it is somewhat surprising that counselors in the current study were found to play an active role in the delivery of stress prevention programming in Tennessee public school systems, given their primary responsibilities as providers of individual and small-group counseling services to students outside the classroom (American School Counselor Association, 2012; Astramovich, 2013).

The results of this study also reveal that counselors (41%), social workers (30%), nurses (20%), and psychologists (18%) are the most common providers of stress-related prevention services in Tennessee public school systems. These results differ from the findings obtained in the SHPPS 2000, which indicated that approximately 79% of U.S. schools that offer crisis intervention and stress management services to students use school nurses as service providers (Brener et al., 2001). In addition, while SHPPS 2000 investigators also found that counselors (77%), psychologists (66%), and social workers (44%) are the most frequent providers of general mental health services to students, they did not report on the extent of clinicians' involvement in the provision of stress-related services (Brener et al., 2001).

In the current study, I also identified a significant ($p = .012$) relationship between stress prevention programming prevalence and school district community type, in which programming frequency was highest among urban districts and lowest among small town/rural school systems in Tennessee. These results verify the findings of past

research on the relationship between school demographic factors and student health services availability, which show that urbanicity (degree to which a school is located in an urban area) is related to variation in school health practices (Balaji et al., 2010; Brener et al., 2003; Martin, 1976; Slade, 2003)

Summary. While several recent studies have generated empirical insights into mental health services for children and adolescents in educational settings in the United States, they have not produced data on school-based stress prevention practices with students either nationally or at the state level. More specifically, despite the fact that the SHPPSs provide a small amount of information on stress-related educational and clinical services for students, these findings do not indicate the extent to which such health education and service trends constitute prevention practices rather than treatment activities with children and adolescents. This important knowledge gap provided the impetus for this study on school district stress prevention practices in the state of Tennessee.

With that said, the current study has contributed to the body of scientific knowledge on stress-related health education and service trends with children and adolescents by focusing on prevention-oriented practices in the Volunteer State. With this targeted research focus, I was able to produce primary descriptive data on the prevalence and characteristics of stress prevention programs and services for students, and the relationship between school district factors and programming and services availability. While the scope of this research was limited to one U.S. state, the results of

this study may serve to promote additional research focused on school-based stress prevention practice trends at the national level.

Theoretical Interpretation

As an inductive form of quantitative research, the current study was not designed to test specific hypotheses derived from theory (Trochim & Donnelly, 2006). Rather, Rogers's DIT has been utilized for the purpose of elucidating process factors that may help explain the findings of this study. As previously mentioned, diffusion is conceptualized in the DIT model as a process through which innovative ideas or practices are communicated to members of a social system over time using specific communication channels (Dearing, 2009; Rogers, 2003). Rogers's theory further posits that the innovation diffusion process comprises four core elements: (a) characteristics of the innovation, (b) communication channels, (c) time, and (d) the social system (Center for Mental Health in Schools at UCLA, n. d.; Rogers, 2003).

In applying the first two theoretical concepts to the survey results, one might surmise that a majority of Tennessee public school districts have adopted stress prevention practices with students based in part on the following two factors: (a) the stress prevention concept's perceived value as a school health promotion idea, and (b) the effectiveness of district-level communication in spreading information on the merits of adopting stress prevention measures with students. In addition, the time element in Rogers's model might further explain the prevalence findings as a reflection of organized efforts within the educational community to address the stress-related supports needs of young Tennesseans. Likewise, Rogers's theoretical notions about social system factors

in the innovation diffusion process promotes additional thinking about the role that organizational opinion leaders (e.g. central administrators, school health professionals, etc.) have played in establishing innovative stress prevention practices with students in the Volunteer State.

Rogers's theory provides a useful framework for informed speculation about process factors that might help explain stress prevention programming/service practices in Tennessee public school systems. When using the model as a frame of reference, one might formulate tentative hypotheses that focus on relations between diffusion process factors and programming/service decisionmaking activities at the school system level. Although the scope of this study did not include an examination of such relationships, future research might test specific hypotheses derived from DIT in order to establish the theory's value in predicting stress prevention programming practices with students in educational settings (Cramer, 2013; Trochim & Donnelly, 2006).

Limitations of Study

Two initial considerations in discerning the limitations of this study include (a) establishing to whom the survey results can be reasonably applied, and (b) ascertaining how generalizable (externally valid) the survey findings are (Radhakrishna & Doamekpor, 2008). With respect to the first consideration, it is important to reiterate that the unit of observation in the current study was the population of active public school systems in the Volunteer State (Tennessee State Department of Education, 2013). As such, the results of this study are not intended to be applicable to private school systems in the state of Tennessee, or to K-12 educational institutions across the nation.

With regard to the issue of generalizability, it is important to emphasize that the school district sample size (N = 135) for this survey research project approximated the population size (N = 136), thereby ensuring that all 135 Tennessee public school systems had an equal opportunity to participate in the survey. Thus, given the current study's large sample size, it seems unlikely that the results of my research have been significantly affected by sample selection bias (Assael & Keon, 1982; Cui, 2003; Fowler, 2009; Kish, 1979; Lindner, Murphy, & Briers, 2001; McNabb, 2014). This conclusion is further supported by the current study's demographic findings for district geographic location, which verify the survey's wide geographic reach in the Volunteer State.

The findings of this study also indicate that only 5% of respondents were urban school systems and 80% were small town/rural districts, which raises concerns about whether the external validity of my results have been compromised by under or overrepresentation of specific demographic subgroups in the survey (Groves, 1989; Mulry, 2008). In examining this issue in greater depth, I reviewed common core census data from the U.S. Department of Education's local education agency universe survey (2010-2011), which indicated that 7% of Tennessee public school systems are urban districts and approximately 84% of public school systems in the state are small town/rural districts (Keaton, 2012). In addition, a just completed study on the status of rural education in America found that only four states have a larger percentage of students enrolled in rural school systems than Tennessee (Johnson, Showalter, Klein, & Lester, 2014). Taken together, these findings suggest that my demographic findings for

participant community type are not biased and provide a fairly accurate descriptive summary of current school district locale distribution patterns in the state of Tennessee.

Another important consideration in determining the generalizability of my findings was ascertaining the relevance of the study's nonresponse rate (28%), which was assessed by conducting a survey nonresponse bias analysis as recommended in the literature (Curtis & Redmond, 2009; Radhakrishna & Doamekpor, 2008; Sivo et al., 2006). As discussed in Chapter 4, this analysis entailed the use of chi-square tests of independence to examine differences in stress prevention programming/service prevalence between early and late survey responders. As shown in Table 18, the results of these analyses were nonsignificant, thus suggesting that the characteristics of nonresponding school districts are not dissimilar to those of respondents (Radhakrishna & Doamekpor, 2008). However, while these results suggest that both the survey sample and the respondents are representative of the target population, my findings have limited external validity (Levin, 2006). As discussed previously, the survey results are not generalizable beyond the population of public school systems in the state of Tennessee.

Other study limitations concern the accuracy of the survey items, as two questions raised issues with some respondents. Eleven percent of respondents provided multiple answers to survey item 14, a single-response question that asked participants to describe the level of instructional intensity provided to students on ways to reduce stress. This multiple response information was ultimately excluded from the frequency analysis, which was limited to single-response data obtained from the survey item. Consequently, while the results confirm the existence of varying levels of instructional intensity across

Tennessee public school systems, the prevalence estimates for specific instructional intensity practices in the study population are less precise than they would have otherwise been had there not been a need to exclude some districts' responses from these calculations.

A similar situation is found in the interpretation of findings for item 21, which asked participants to select the response category that best describes the service delivery model used by health professionals in the provision of stress prevention services to students. Based on the discovery that 3% of respondents provided multiple responses to the question, it was necessary to exclude these cases in the data analysis process. Consequently, the prevalence estimates for specific school district service delivery practices are also less accurate than they would have been had there not been a need to exclude some of the survey data. However, given the limited number of respondents with multiple answers, this likely does not have a major influence on the results.

At this point in the discussion, it is important to emphasize that these data quality issues reflect weaknesses in the survey design that should be addressed in future research. More specifically, based on the survey's performance in this study, it is evident that questions 14 and 21 should have been constructed as multiple response items. In such a scenario, all of the collected data would have been available for analysis, and the results would have likely provided more precise estimates of the prevalence of these stress prevention practice characteristics in the study population.

It is also important to note that there may be additional weaknesses in the survey that are yet unknown. For example, it is possible that the survey's measurement accuracy

was compromised by respondent recall errors or by some participants' lack of knowledge of specific stress prevention practices taking place in their districts. With that said, however, there were several instances in which districts elected to have more than one individual fill out the survey in an effort to ensure that the information being provided was complete and accurate. Thus, although measurement error is always a potential threat to a survey's validity, it is difficult to gage its impact on data quality in the current study (Biemer, Groves, Lyberg, Mathiowetz, & Sudman, 1991).

Another limitation of this descriptive quantitative study concerns the quality of inferences that can be drawn from the identified statistical association between two of my study variables (Lavrakas, 2008; Trochim & Donnelly, 2006). Based on the fact that I utilized a nonexperimental research design and measured the study variables at a single point in time, it is not possible to ascertain the sequence of events that led to the identified relationship between programming prevalence and school district community type (Grimes & Schulz, 2002; Levin, 2006). Thus, while these variables are somehow related, the present study does not allow for internally valid conclusions about causality (Lavrakas, 2008).

Recommendations

Given that the scope of the current study was limited to stress prevention practices with children and adolescents in Tennessee public school districts, it is recommended that follow-up research be conducted on stress prevention practices with students at the national level. This expanded research focus would extend the findings of the current study by generating baseline data on stress prevention practice trends in districts across

the nation. Such follow-up research would further support the objectives of the current nationwide movement toward evidence-based practice in school mental health by expanding the scientific knowledge base on school-based stress prevention practices in the United States (Raines, 2008).

Another possible focus for future research is the examination of stress prevention practices with school personnel in K-12 educational systems nationwide. This recommendation is based in part on the findings of a recent MetLife survey of the American teacher, which revealed that the majority of the nation's teachers and school principals currently experience high levels of occupational stress (Markow, Macia, & Lee, 2013). In addition, despite the existence of evidence-based programs for preventing and reducing the negative aspects of workplace stress (Richardson & Rothstein, 2008; van der Hek & Plomp, 1997), researchers have yet to examine real-world prevention practices related to occupational stress in elementary and secondary education. Thus, it is important to establish whether evidence-based stress prevention programs are reaching school system personnel at a time when teachers and principals are facing enormous challenges in meeting the diverse educational and health-related needs of young Americans (Children's Defense Fund, 2014; Graham, 2005; Lear, 2007).

The other recommendation entails the study of school administrators' beliefs about the stress-related support needs of young children in educational settings. This research focus is justified by the finding that children's preschool adjustment is often undermined by factors such as childhood poverty, disabilities, and unmet socioemotional needs (Fantuzzo et al., 2005; Gulay & Onder, 2013; Joseph & Strain, 2003; Rosenkoetter,

Whaley, Hains, & Pierce, 2001; Rous & Hallam, 2012). Thus, in light of the fact that school administrators play a key role in programming adoption and implementation practices with students (Durlak, 2013), it seems prudent to consider their views on stress prevention programming and services for children at the preschool level.

Implications

The intended social change impact of this study has been to promote healthy developmental outcomes in young Tennesseans, by generating empirical information that informs the work of educators and school health professionals who seek to initiate or improve stress prevention practices with students. Support for this social change objective is found in the literature, as schools are regarded as fundamental protective systems and ideal settings for the delivery of preventive and health promotion programs and services to children and youth (Masten, Herbers, Cutuli, & Lafavor, 2008; O'Connell et al., 2009; Paternite, 2005; Skinner & Zimmer-Gembeck, 2009; Weare & Nind, 2011).

With that said, it is important to emphasize that the results of this study are not meant to serve as a definitive guide for specific stress prevention programming and services adoption practices. Rather, the current study may inform the work of educators and school health professionals in the following ways: (a) raise professional awareness about the topic of student stress prevention, (b) stimulate interest in programming and services adoption, and (c) provide information on current programming and service trends in the Tennessee educational community. It is through this process of information sharing that the seeds of social change will likely be planted, as the findings of the

present study may promote additional school-based practice activity that expands student access to stress prevention programming and services in the Volunteer State.

The current study's potential value in promoting increased student access to stress prevention programming and services may also benefit society at large. More specifically, with the understanding that student exposure to stress prevention training may help them acquire adaptive skills that strengthen their resiliency and decrease their susceptibility to stress-related disorders, it stands to reason that efforts to support school-based programming/service initiatives that foster the adaptive competence of children and youth may help improve the health of local communities in the state of Tennessee (Compas, 2006; Kumpfer & Summerhays, 2006; Masten, 2001; Masten & Coatsworth, 1998; Tuomi, 2005).

Conclusion

This survey research project gathered primary descriptive data on school district stress prevention practices in the state of Tennessee that did not previously exist, and that may promote further study in this research area as well as enhance the welfare of students across the Volunteer State. More specifically, this study may benefit young Tennesseans by informing the work of educators and school health professionals who seek to adopt programs and services that foster the adaptive competence of students. This positive social change objective served as an impetus for the current study and was justified by the knowledge that children and adolescents possess a natural propensity for healthy growth and development that can be enhanced through the efforts of caring adults to help

them reach their full potential as human beings (Damon, 2004; Edwards et al., 2007; Kegler et al., 2005, Larson, 2000; Masten, 2001; Ryan & Deci, 2000).

In closing, it is important to underscore the potential significance of the high response rate attained in the current study, which was achieved in the absence of a research sponsor or use of incentives to encourage school district participation in the survey. This was an unexpected research outcome, and one that is possibly explained by the survey topic's intrinsic appeal and the Tennessee educational community's commitment to the welfare of students. It is clear from the widespread level of school district support for this study that civic mindedness remains alive and well in the Volunteer State.

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Appendix A: Survey Instrument

No. _____

School District Stress Prevention

Activities Survey

INSTRUCTIONS:

Please answer each survey question by checking (√) the applicable box(es) as indicated.

SECTION (A): School District Demographic Characteristics

1. **Please indicate your current professional position in your school system.**

   - ☐ Administrative
   - ☐ Clinical
   - ☐ Teacher
   - ☐ Other (Please specify) _____

2. **In which Grand Division of the state of Tennessee is your school district located?**

   - ☐ East Tennessee
   - ☐ Middle Tennessee
   - ☐ West Tennessee

3. **Please select the category that best describes the type of community in which your school district is located.**

   - ☐ Urban community
   - ☐ Urban fringe /large town community
   - ☐ Small town/rural community

4. **Please select the category that corresponds with the number of schools in your district.**

   - ☐ 1 to 5
   - ☐ 6 to 10
   - ☐ 11 to 19
   - ☐ 20 or more

5. **Please select the category that corresponds with the number of students in your district.**

   - ☐ Less than 1,000
   - ☐ 1,000 to 3,000
   - ☐ 3,001 to 6,000
   - ☐ 6,001 to 10,000
   - ☐ More than 10,000

6. **Please indicate the level(s) of education provided to students in your district. *(Please check all that apply.)***

   - ☐ Preschool
   - ☐ Elementary School
   - ☐ Middle School
   - ☐ High School

7. **Please select the category that best describes the level of minority student enrollment in your district.**

   - ☐ Low (0-15%)
   - ☐ Medium (16-50%)
   - ☐ High (over 50%)

SECTION (B): School-Based Stress Prevention Programming

Please Note: The term ***'school-based stress prevention programming'*** denotes curriculum-based instruction on ways to reduce and manage stress for the general student population.

8. **Do schools in your district provide curriculum-based instruction to students on ways to reduce and manage stress?**
   - ☐ Yes
   - ☐ No ***(If no, please go to question 15)***

9. **Please indicate the school level(s) in your district that provide(s) curriculum-based instruction to students on ways to reduce and manage stress.** ***(Please check all that apply.)***
   - ☐ Preschool
   - ☐ Elementary School
   - ☐ Middle School
   - ☐ High School

10. **Please indicate the student population(s) in your district that receive(s) curriculum-based instruction on ways to reduce and manage stress.** ***(Please check all that apply.)***
    - ☐ Children
    - ☐ Adolescents

11. **Please indicate the main objective(s) of stress-related prevention programs for students in your district.** ***(Please check all that apply.)***
    - ☐ Coping with everyday stress
    - ☐ Coping with emergency/crisis situations

12. Please indicate the type(s) of school-based stress prevention program(s) provided to students in your district. *(Please check all that apply.)*

- ☐ Cognitive-behavioral programs (e.g., CBITS, Stress Inoculation Training [SIT])
- ☐ Coping skills training (e. g., Zippy's Friends, Learn Young-Learn Fair)
- ☐ Crisis prevention and response training (e.g. the PREPaRE program)
- ☐ Mind-body programs (e.g., meditation, relaxation training)
- ☐ Psychoeducational programs (e.g., Social and Emotional Learning, the PATHS program)
- ☐ Eclectic programs (multi-component stress prevention activities)
- ☐ Other (please specify) _____

13. Please indicate the type(s) of instructional professional(s) that deliver stress prevention programming to students in your district. (*Please check all that apply.*)

- ☐ Regular classroom teachers
- ☐ Health education specialists
- ☐ Special education instructors
- ☐ Classroom resource staff (e.g., teachers' assistants)
- ☐ Consultants

14. Please select the category that best describes the intensity of instruction provided to students in your district on ways to reduce and manage stress.

- ☐ Separate health education course
- ☐ Divided course that includes other subjects
- ☐ Educational units or lessons in a general health education course
- ☐ Educational units or lessons in a non-health-related education course
- ☐ Other (please specify) _____

SECTION (C): School-Based Stress Prevention Services

Please Note: The term ***'school-based stress prevention services'*** denotes school-based mental health services delivered by clinicians to the general student population for the purpose of helping students reduce and manage stress.

15. Do schools in your district provide stress-related preventive mental health services to non-clinical student populations?

- ☐ Yes
- ☐ No ***(If no, you have completed the survey!)***

16. Please indicate the school level(s) in your district that provide(s) stress-related preventive mental health services to non-clinical student populations. *(Please check all that apply.)*

- ☐ Preschool
- ☐ Elementary School
- ☐ Middle School
- ☐ High School

17. Please indicate the student population(s) in your school district that receive(s) stress prevention services from mental health professionals. *(Please check all that apply.)*

- ☐ Children
- ☐ Adolescents

18. Please indicate the main objective(s) of stress-related preventive mental health services for students in your district. *(Please check all that apply.)*

- ☐ Reducing and managing everyday stress
- ☐ Reducing and managing emergency/crisis situations

19. Please indicate the type(s) of stress-related preventive mental health service(s) delivered to students in your district. *(Please check all that apply.)*

- ☐ Individual services
- ☐ Group-based services

20. Please indicate the type(s) of mental health professional(s) that provide(s) stress prevention services to students in your district. *(Please check all that apply.)*

- ☐ Counselors
- ☐ Psychologists
- ☐ Social workers
- ☐ Nurses
- ☐ Psychiatrists
- ☐ Other *(please specify)* _____

21. Please select the category that <u>best</u> describes the service delivery model used by mental health professionals to provide stress prevention services to students in your district.

- ☐ Services are coordinated by schools and delivered on school grounds by school-employed clinicians
- ☐ Services are coordinated by schools and delivered on school grounds by community-based clinicians
- ☐ Services are coordinated by schools and delivered off campus by community-based clinicians
- ☐ Services are coordinated by schools and delivered on and off campus by school-employed and community-based clinicians

Appendix B: E-mail Contact Letter

Date

Dear Superintendent_____,

My name is _____ and I am a doctoral student at Walden University and resident of the Volunteer State. For my dissertation project in Health Psychology, I am conducting a survey-based study on stress prevention programs and services for children and adolescents in public school districts in the state of Tennessee.

At this time, I am respectfully requesting your assistance in identifying a staff person to contact who is knowledgeable about prevention-oriented educational programs and mental health services for students in your school system and who I can invite to participate in the confidential school district survey. If you could please reply to this email at your earliest convenience with the name and contact details of such person, it would be greatly appreciated.

In order to provide you with more details regarding the study, please see the survey announcement letter attached to this email that includes important study-related information.

Thank you in advance for any assistance that you can provide.

If you have any questions or need further information about the survey, please contact me at the email address or phone number shown below.

Sincerely,

Student's Name
Phone Number
Walden Email Address

Appendix C: Postal Contact Letter

STUDENT'S NAME

Ph.D. Student
Health Psychology Program
Walden University

Street Address
City, State, Zip Code
Phone Number
Email Address

Date

Dear Superintendent _____,

My name is _____ and I am a doctoral student at Walden University and resident of the Volunteer State. For my dissertation project in Health Psychology, I am conducting a survey-based study on stress prevention programs and services for children and adolescents in public school districts in the state of Tennessee.

At this time, I am respectfully requesting your assistance in identifying a staff person to contact who is knowledgeable about prevention-oriented educational programs and mental health services for students in your school system and who I can invite to participate in the confidential school district survey. If you could please reply to this information request at your earliest convenience with the name and contact details of such person, it would be greatly appreciated.

In order to provide you with more details regarding the study, please see the attached survey announcement letter that includes important study-related information.

Thank you in advance for any assistance that you can provide.

If you have any questions or need further information about the survey, please contact me at the email address or phone number shown above.

Sincerely,
Student's Name

Appendix D: Survey Announcement Letter

STUDENT'S NAME

Ph.D. Student
Health Psychology Program
Walden University

Street Address
City, State, Zip Code
Phone Number
Email Address

Date

Subject: School District Survey Announcement

Dear Prospective Survey Participant,

My name is _____ and I am a doctoral student at Walden University and resident of the Volunteer State. For my dissertation project in Health Psychology, I am conducting a survey-based study on stress prevention programs and services for children and adolescents in school districts in the state of Tennessee, and am respectfully requesting your participation in the upcoming survey being sent to public school districts across the state.

Purpose of Study
This survey research is intended to generate descriptive information on stress prevention programs and services for students in school districts across Tennessee that can be used to inform the work of educators and school-based health professionals with an interest in helping students learn how to effectively manage life stress. Questions on the survey are designed to address the following:

- General school system demographic information
- Prevalence of stress prevention programs and services for students
- Characteristics of stress prevention programs and services for students

Study Population
The survey population is public school systems in the state of Tennessee.

Postal Survey Procedure
If you agree to participate in this upcoming study you will be asked to fill out the survey and return it in the pre-stamped envelope that will be provided in the survey packet. Please feel free to collaborate with colleagues in filling out the survey if needed. The time required to complete the 21-item questionnaire is approximately 10-15 minutes.

Voluntary Nature of Participation
Your participation in this survey is voluntary and you have the right to refuse or discontinue your participation in the study at any point without penalty. Completion and return of the questionnaire will serve as verification of your willingness to participate in this research project.

Privacy Statement
All survey information provided by school districts will be kept confidential through data security procedures that include numerically coding questionnaires to de-identify participants' responses and using separate password-protected computer files to store participant ID numbers and survey data, respectively. Participant confidentiality will be further protected by presenting the findings of this study in aggregate form and by not identifying school districts by name in any reports associated with this survey. Study data will be kept in a secure location for a period of at least 5 years as required by Walden University.

Potential Risks of Participation
There are no known or anticipated risks associated with participation in this survey research project.

Benefits of Participation
The primary anticipated benefit of school district involvement in this study is the knowledge that your participation has the potential to benefit the lives of children and adolescents across Tennessee by providing programmatic information that can inform the work of school-based professionals who seek to initiate and/or improve stress-related prevention programs and services that foster the coping development of young Tennesseans. In support of this important social-emotional developmental goal, each public school system in the state will be provided with a summary report of the findings of this study.

Researcher Contact Information
Should you have any questions about this study please feel free to contact me.

Thank you in advance for your consideration in completing the confidential school district survey that will be mailed to you in the next few weeks.

Sincerely,
Student's Name

This study has been reviewed and approved by Walden University IRB (# 10-03-13-0091834) on 10-03-13 and expires 10-02-14. If you have any questions regarding your rights as a study participant please contact my Walden University research supervisor, Dr. Leilani Endicott, at (612) 312-1210.

Appendix E: Survey Consent Form

STUDENT'S NAME

Ph.D. Student
Health Psychology Program
Walden University

Street Address
City, State, Zip Code
Phone Number
Email Address

Date

Subject: School District Survey Consent Form

Dear Prospective Survey Participant,

My name is _____ and I am a doctoral student at Walden University and resident of the Volunteer State. For my dissertation project in Health Psychology, I am conducting a survey-based study on stress prevention programs and services for children and adolescents in public school districts in the state of Tennessee. I am respectfully requesting your participation in this survey research as you have been identified as someone who is knowledgeable about prevention-oriented educational programs and mental health services for students in your school system.

Purpose of Study

This survey research is intended to generate descriptive information on stress prevention programs and services for students in public school systems across Tennessee that can be used to inform the work of educators and school-based health professionals with an interest in helping students learn how to effectively manage life stress. Questions on the survey are designed to address the following:

- General school system demographic information
- Prevalence of stress prevention programs and services for students
- Characteristics of stress prevention programs and services for students

Study Population

The survey population is public school systems in the state of Tennessee.

Postal Survey Procedure

If you agree to participate in this study please fill out the survey and return it in the pre-stamped envelope provided in the survey packet. Please feel free to collaborate with colleagues in filling out the survey if needed. The time required to complete the 21-item questionnaire is approximately 10-15 minutes.

Voluntary Nature of Participation

Your participation in this survey is voluntary and you have the right to refuse or discontinue your participation in the study at any point without penalty. Completion and return of the questionnaire will serve as verification of your willingness to participate in this research project. If you choose to participate in this study please keep this consent form for your records.

Privacy Statement

All survey information provided by school districts will be kept confidential through data security procedures that include numerically coding questionnaires to de-identify participants' responses and using separate password-protected computer files to store participant ID numbers and survey data, respectively. Participant confidentiality will be further protected by presenting the findings of this study in aggregate form and by not identifying school districts by name in any reports associated with this survey. Study data will be kept in a secure location for a period of at least 5 years as required by Walden University.

Potential Risks of Participation

There are no known or anticipated risks associated with participation in this survey research project.

Benefits of Participation

The primary anticipated benefit of school district involvement in this study is the knowledge that your participation has the potential to benefit the lives of children and adolescents across Tennessee by providing programmatic information that can inform the work of school-based professionals who seek to initiate and/or improve stress-related prevention programs and services that foster the coping development of young Tennesseans. In support of this important social-emotional developmental goal, each public school system in the state will be provided with a summary report of the findings of this study.

Compensation for Participation

While this study does not provide compensation to school district participants, I value your professional time and would greatly appreciate your participation in this survey research.

Researcher Contact Information

Should you have any questions about this study please feel free to contact me.

Thank you in advance for your consideration in completing the confidential school district survey.

Sincerely,
Student's Name

This study has been reviewed and approved by Walden University IRB (# 10-03-13-0091834) on 10-03-13 and expires 10-02-14. If you have any questions about your rights as a study participant please contact Walden University's Research Participant Advocate, Dr. Leilani Endicott, at (612) 312-1210.

Appendix F: Revised Postal Contact Letter

STUDENT'S NAME

Ph.D. Student
Health Psychology Program
Walden University

Street Address
City, State, Zip Code
Phone Number
Email Address

Date

Dear Superintendent_____,

My name is _____ and I am a doctoral student at Walden University and resident of the Volunteer State. For my dissertation project in Health Psychology, I am conducting a survey-based study on stress prevention programs and services for children and adolescents in public school districts in the state of Tennessee.

At this time, I am respectfully requesting your assistance in identifying a staff person who is knowledgeable about prevention-oriented educational programs and mental health services for students in your school system and who might be willing to participate in the confidential school district survey. If you could please forward the survey and consent form to such person, it would be greatly appreciated.

In order to provide you with more details regarding the study, please see the survey consent form that includes important study-related information.

Thank you in advance for any assistance that you can provide.

If you have any questions or need further information about the survey, please contact me at the email address or phone number shown above.

Sincerely,
Student's Name

Curriculum Vitae for Stephen F. Keohane

EDUCATION

PhD, Psychology
Walden University, Minneapolis, Minnesota
Expected Graduation Date of December 2014
Area of Specialization: Health Psychology
Doctoral Dissertation: *School District Stress Prevention Practices in a Southern U.S. State*
Dissertation Chair: Dr. Miranda van Tilburg

MSW, Social Work (1993)
Boston College, Chestnut Hill, Massachusetts
Concentration: Clinical

BA, English (1984)
Framingham State College, Framingham, Massachusetts

LICENSURE

Independent Clinical Social Worker (LICSW)
Massachusetts, 1996 to present

RELATED EXPERIENCE

Private Organizational Behavioral Health Consultant (2004 to present)
Provide behavioral health consultations to corporate, church, and youth sports organizations on a pro bono basis

Youth Ice Hockey Instructor (2010 to 2012)
Ice Chalet, Knoxville, Tennessee
Provided skill-centered instruction to children and youth. Worked closely with hockey director in developing age-appropriate training activities for participants. Provided hockey-related consultations to participants' parents.

Outpatient Clinician (1993 to 2001)
Lipton Mental Health Center, Fitchburg, Massachusetts
Developmental Services Department (DSD)
Performed general psychiatric evaluations and behavioral risk assessments. Provided community-based clinical services to individuals, groups, families, and organizations using treatment methods such as cognitive-behavioral therapy, supportive psychodynamic therapy, family systems therapy, meditation-relaxation training

approaches, and mental health consultation. Performed on-site emergency intake/screening coverage duties. Carried out clinical case management responsibilities such as recordkeeping and disposition planning. Implemented treatment outcome monitoring protocols as clinically indicated. Conducted behavioral health training workshops for community partners in central Massachusetts.

Clinical Social Work Intern, Outpatient Mental Health Unit
(Sept 1992 to May 1993)
Edith Nourse Rogers Memorial Veterans Hospital, Bedford Massachusetts
Received clinical training in psychiatric assessment, diagnosis, and treatment. Utilized cognitive-behavioral therapy, family therapy, supportive psychotherapy, and meditation-relaxation methods in the provision of clinical services to inpatient/outpatient veteran populations. Performed clinical case management duties including service coordination, recordkeeping, and disposition planning for patients. Assisted in the design and implementation of quasi-experimental research project for evaluating hospital's stress reduction program. Monitored patient clinical outcomes using single-subject, repeated measures protocols.

Clinical Social Work Intern, Adult Inpatient Psychiatric Unit
(Sept 1991to May 1992)
University of Massachusetts Medical Center, Worcester, Massachusetts
Received clinical training in psychiatric assessment, diagnosis, and treatment. Provided time-limited clinical services to individuals and families using methods such as cognitive-behavioral therapy, family therapy, supportive therapy, and mindfulness meditation. Performed clinical case management duties including recordkeeping, interagency coordination of inpatient services, and aftercare planning.

Human Services Worker (1987 to 1991)
Eastern Middlesex Human Services, Wakefield, Massachusetts
Cambridge Family & Children's Services, Cambridge, Massachusetts
Provided social and recreational opportunities to children, adolescents, and adults with disabilities (e.g., autism, cerebral palsy, mental retardation). Coaching assistant to Special Olympians at sporting events in the Boston area. Recreational group leader for special education students in Cambridge public school system.

Community Sports Organizer and Coach (1981 to 1998)
Coordinated recreational baseball, softball, and ice hockey programs for children and adults. Little League baseball and youth hockey coach in eastern Massachusetts.

PROFESSIONAL MEMBERSHIP

North American Association of Christians in Social Work